Knowledge Development Report

Veterans' Employment and Training Services (VETS) Research Study Design

Call Order Number 1605DC-17-U-00132

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Prepared for:
Chief Evaluation Office
U.S. Department of Labor
Frances Perkins Building
200 Constitution Ave. NW
Washington, DC 20210

Submitted by:
Abt Associates
6130 Executive Boulevard
Rockville, MD 20852

Jacob Alex Klerman
Andrew Clarkwest
Daniel Litwok
Zachary Epstein

In Partnership with:
RAND
Charles Goldman
Hank Waggy

Capital Research Corporation
John Trutko

Disclaimers and Language Usage

Unless otherwise noted, we use the term *veteran* to refer to anyone who was discharged from an active component of the armed services under conditions other than dishonorable (i.e., Army, Navy, Air Force, Marines, Coast Guard) and to reservists who served on active duty for more than 180 consecutive days. Reserve component members (e.g., National Guard, Army Reserve) are not included unless they made the active duty requirement (180 consecutive days) or accumulated at least 20 years of service. This is the definition the VETS program uses (DOL, 2014a).

In several places, this document touches on statutory and regulatory issues; those include the details of VETS program service provision and statutory provisions for sharing data. This report is not a legally binding document. We have provided our best understanding of the legal issues. That understanding may be incorrect or incomplete.

This report was prepared for the U.S. Department of Labor (DOL), Chief Evaluation Office (CEO) by Abt Associates, under contract number DOLQ129633231, call order number 1605DC-17-U-00132. The views expressed are those of the authors and should not be attributed to DOL, nor does mention of trade names, commercial products, or organizations imply endorsement of same by the U.S. Government.

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List of Exhibits

Acknowledgments

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[1]   For full details on interview dates and interviewees, see Appendix A.

List of Acronyms

ABS	Address-Based Sampling
ACF	Administration for Children and Families
ACS	American Community Survey
AFQT	Armed Forces Qualification Test
AIAN	American Indian or Alaskan Native
AJC	American Job Center
ASVAB	Armed Services Vocational Aptitude Battery
BLS	U.S. Bureau of Labor Statistics
CARRA	Center for Administrative Records Research and Applications
CATI	computer-assisted telephone interviewing
CDS	Computerized Delivery Sequence
CEO	Chief Evaluation Office
CPS	Current Population Survey
DC	Disability Compensation
DEERS	Defense Enrollment Eligibility Reporting System
DHS	U.S. Department of Homeland Security
DMDC	Defense Manpower Data Center
DoD	U.S. Department of Defense
DOL	U.S. Department of Labor
DVOP	Disabled Veterans' Outreach Program; DVOP specialist
EB	Extended Benefits
ES	Employment Service, Wegner-Peyser
ETA	Employment and Training Administration
EUC	Emergency Unemployment Compensation
FY	fiscal year
GWT	Global War on Terror
HHS	U.S. Department of Health and Human Services
ICS	individualized career services
IRR	Individual Ready Reserve
IRS	Internal Revenue Service
ITA	Individual Training Account
JVSG	Jobs for Veterans State Grants program
LEHD	Longitudinal Employer-Household Dynamics
LVER	Local Veterans' Employment Representative
MEPCOM	Military Entrance Processing Command
NDNH	National Directory of New Hires
NLSY	National Longitudinal Survey of Youth
NPV	net present value
NSC	National Student Clearinghouse
NSV	National Survey of Veterans
OCSE	Office of Child Support Enforcement
OEMA	Office of Economic and Manpower Analysis
OMB	Office of Management and Budget

OPM	Office of Personnel Management
OPRE	Office of Planning, Research, and Evaluation
PIK	Protected Identification Key
PIRL	Participant Individual Record Layout
PSM	propensity score matching
PTSD	post-traumatic stress disorder
PY	program year
RDC	Research Data Center
RDD	random digit dialing
ROI	return on investment
RQ	research question
SBE	significant barrier to employment
SNAP	Supplemental Nutrition Assistance Program
SSA	Social Security Administration
SSDI	Social Security Disability Insurance
SSI	Supplemental Security Income
SSN	Social Security number
TAA	Trade Adjustment Assistance program
TANF	Temporary Assistance for Needy Families
TAP	Transition Assistance Program
TEGL	Training and Employment Guidance Letter
UCFE	UCF/Unemployment Compensation for Federal Employees
UCX	Unemployment Compensation for Ex-Servicemembers
UI	Unemployment Insurance
USERRA	Uniformed Services Employment and Reemployment Rights Act of 1994
VA	U.S. Department of Veterans Affairs
VDEI	Veterans' Data Exchange Initiative
VETS	Veterans' Employment and Training Services program
VOW	Veterans Opportunity to Work
VPL	Veterans Program Letter
WDB	Workforce Development Board
WEX	Work Experience File
WIA	Workforce Investment Act of 1998
WIASRD	Workforce Investment Act Standardized Record Data
WIOA	Workforce Innovation and Opportunity Act
WISPR	Workforce Investment Streamlined Performance Reporting

Executive Summary

The U.S. Department of Labor (DOL) makes major investments in employment and training services to help improve veterans' labor market outcomes. These investments include services available only to veterans through the Jobs for Veterans State Grants program (JVSG), as well as priority of service to workforce programs available to the broader population, most notably through the Wagner-Peyser Employment Service and Workforce Innovation and Opportunity Act (WIOA) Adult and Dislocated Worker programs.

Recognizing the importance of understanding the veterans served by DOL, their use of workforce services, and their labor market outcomes, Section 502 of the *Jeff Miller and Richard Blumenthal Veterans Health Care and Benefits Improvement Act of 2016* (*PL 114-315*) requires DOL to fund a "longitudinal study of job counseling, training, and placement service for veterans."[2]

To develop "design options," that is potential approaches for addressing this requirement and more generally for building evidence about improving labor market outcomes for this population, DOL's Chief Evaluation Office (CEO) awarded a design contract—the "**Veterans' Employment and Training Services (VETS) Research Study Design**"—to Abt Associates and its partners, RAND Corporation and Capital Research Corporation. This *Knowledge Development Report* provides a foundation from which the project will develop and assess potential study designs that meet the legislative requirements and the informational needs and priorities of DOL. First, this document attempts to clearly specify the research questions. The document then describes the populations of veterans to be studied, the nature of the programs that serve them, veterans' use of the workforce system, and potential sources of data to capture the required outcome measures (such as employment, income, use of educational benefits, and Unemployment Compensation receipt).

To develop that understanding, the evaluation design team examined existing literature and data, interviewed individuals with relevant program and data system knowledge and expertise, and visited an American Job Center (AJC). The literature reviewed by the team includes relevant statutory language, DOL programmatic guidance, annual reports on the JVSG and WIOA programs, documentation on relevant data sources, and published research on veterans' employment, veterans-serving workforce programs, and relevant analytic and data collection methods. We also analyzed public use Census Bureau and DOL workforce data on veterans. We interviewed federal and local program staff and data custodians from several agencies. We also solicited input on workforce programs and evaluation methods and findings from external research experts.

From those knowledge development activities, we identified the key design considerations and their implications for the development and implementation of the congressionally mandated longitudinal study of veterans.

Key Study Parameters

DOL's solicitation for this design options study specifies a series of research questions, starting with those detailed in *PL 114-315*, with additions consistent with the statutory language that the study collect

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[2]   https://www.congress.gov/114/plaws/publ315/PLAW-114publ315.pdf

"such other information as the Secretary [of Labor] determines appropriate." The **research questions** are of the following types:

1. **Implementation:** Detailing the services made available to veterans in AJCs.

2. **Descriptive:** Detailing the characteristics of veterans served by AJCs (e.g., military service history and demographics), their receipt of educational and vocational rehabilitation benefits, utilization and perceptions of AJC services, and outcomes (especially employment and income). Furthermore, the study is to be longitudinal, describing the evolution of these outcomes over five years.

3. **Causal (Impact):** Rigorously capturing how and to what extent AJC services improve veterans' outcomes.

4. **Cost/benefit:** Estimating how the costs of AJC services compare to the benefits they produce.

DOL's solicitation and the statute require description of the characteristics of veterans, their use of services, and a comparison of outcomes for **three distinct groups of veterans**—veterans using *intensive* workforce services; veterans using *only non-intensive* workforce services; and veterans in the workforce but using *no workforce services*.

To support this precise level of targeting, the study must complete **three steps**:

1. Build a list of veterans in the workforce.

2. Classify those veterans by their use of workforce services.

3. Tabulate outcomes for each group.

The major design challenge is how to complete these three steps in a cost-efficient and technically sound manner.

A secondary design challenge is how to address the causal (impact) research questions and the cost benefit research questions—which also require an estimate of impact. Recently and consistent with the methodological literature, DOL has primarily address such causal impact research questions through random assignment studies. Given prohibitions on restricting veterans' access to services, impact estimates of the overall effect of workforce services to veterans would likely need to rely on nonexperimental methods. In particular, some form of propensity score matching appears to be the most promising approach. In general, the extent to which such nonexperimental methods can estimate casual impact is a subject of scholarly debate. Estimating the causal impact of workforce programs for veterans does not appear to be particularly amenable to nonexperimental methods.

Data Source Options and Challenges

Developing design options to answer the questions included in the solicitation and the statute involves addressing a number of methodological challenges related to identifying a rigorous yet cost-effective approach to conducting the impact, descriptive and cost/benefit analyses, each of which are discussed in this report. Nevertheless, the greatest challenge by far is how to obtain the data required to complete the three steps above. The balance of this Executive Summary focuses on obtaining the required data.

Administrative Data

The most cost-effective approach would be to rely primarily or solely on extant sources, primarily administrative data.

However, *some of the research questions cannot be answered entirely with existing data*. Some of the outcomes of interest are not recorded at all in any administrative data, some are recorded but not exactly in the way specified in the statute, and some are not recorded in administrative data at all. Among the descriptive questions, this is true of the information on participants' subjective perceptions of AJC services. Implementation and cost questions can only be partially addressed using existing information. Answering those questions would require some primary data collection efforts to supplement administrative data—at a minimum, site visits and focus groups.

The greater challenge for an approach relying on administrative data is one of access. That is, though considerable relevant administrative data with individual identifiers exist, *DOL controls none of them, and they are highly protected by their custodial agencies*. The data required to execute the three steps above are controlled by a range of federal and state entities. To fully support this study, the data would need to be obtained in a timely manner and linked for analysis. This challenge applies broadly to the data needed for each of the three steps:

- **List of veterans in the workforce.** The U.S. Department of Defense (DoD) and the Veterans Administration (VA) hold lists of veterans, though the workforce status of those veterans would have to be captured by other means. American Community Survey (ACS) data, held by the Census Bureau, is another potential source of a list of veterans, and would also contain information on whether those veterans are in the workforce.

- **Veterans' workforce services use.** States hold data on use of their workforce services by individuals. States share that data with DOL, but generally only in de-identified form. That the data are de-identified make it impossible to merge DOL's workforce data to other necessary data sources—particularly sources of information on prior military service and key outcome measures. Language in the WIOA authorizing statute appears to restrict DOL from creating an identified (e.g., with names and SSNs) national database of users served under Titles I and IV.[3] If access to identified, nationwide DOL workforce data on veterans cannot be secured, an alternative might be to work with a subset of states to obtain their workforce data directly. The attractiveness of this approach is sensitive to what fraction and mix of selected states agree to participate.

- **Outcomes.** The statute requires information on a range of outcomes, including employment, earnings, household income, home ownership, and use of vocational rehabilitation services. Even if access to a list of veterans using intensive workforce services could be arranged, obtaining access to administrative data on outcomes required to meet the congressional mandate would present another challenge. Arrangements would need to be made with DoD or VA to provide identified data on veterans' benefits use. For earnings and income data, there are multiple sources including state Unemployment Insurance earnings data or federal Office of Child Support Enforcement (OCSE)/National Directory of New Hires (NDNH), Social Security Administration (SSA), and Internal Revenue Service (IRS).

  Due to the sensitivity of the underlying data, however, all of the corresponding data custodians put strict limits on access. If, for example OCSE, SSA, or IRS were used as the source for income measures, the source organization would likely have to serve as a "safe harbor," receiving and

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[3] This includes individuals served by the WIA Adult and Dislocated Worker programs. JVSG and the Wagner-Peyser Employment Service are not covered under those titles.

merging identified data from other relevant data sources (such as DOL workforce data and DoD or VA data), then de-identifying any files to which the study team then has access.

In the absence of Congressionally-mandated cross-agency cooperation, paths exist for obtaining much of the required data, but the negotiation process and subsequent logistics will be time-consuming, and success is not guaranteed. In the case of workforce data, obtaining nationwide information might not be possible, absent statutory changes.

A Study-Specific Survey

Alternatively, the study could gather most or all of the required information by fielding its own customized survey of veterans. This option presents its own set of challenges.

- A study-specific survey approach would have some *drawbacks related to data quality.* Information obtained on use of workforce services and income, for example, are likely to be less precise when reported on a survey (due to recall error and survey nonresponse) than in administrative data.

- In addition, a study relying on primary data collection to satisfy all three study steps would be *extraordinarily expensive.* The cost is particularly high for the first two steps because veterans using workforce services—and especially intensive services—are a rare population. The most recent available data suggest that veterans using intensive workforce services represent roughly 0.1 percent of all adults and about 1 percent of all veterans.

  This presents a "needle-in-a-haystack" challenge if the study begins with no pre-existing list of veterans or their use of workforce services, and instead has to go out and find veterans from each group from the general population. Assuming standard rates of survey response, the study would need to contact tens of millions of individuals in order to find enough sample members for each of the three study groups (with the rarest group presenting the greatest challenge). The resulting study costs would be in the hundreds of millions of dollars.

Having a list of veterans to start with would shrink the haystack by 90 percent (because only about 10 percent of the population are veterans). This would reduce costs to the tens of millions, rather than hundreds of millions. Reducing costs of a survey-based approach by a substantially greater amount than that would require obtaining a list of veterans who have used workforce services. Such data would allow a sample to be identified directly, rather than having to search for them by contacting members of the broader population at random. DOL workforce data or state workforce data are the only reasonable sources of a list of veterans receiving workforce services.[4]

In the absence of extant data containing identifying information for veterans' and their use of workforce services, administrative data-based approaches appear to be infeasible. The alternative would be a survey based strategy, but this option would have relatively high cost.

Hybrid Administrative/Survey Options

Given limitations of administrative data and a study-specific survey as standalone options, it is natural to explore opportunities to combine the two—collecting and combining administrative and survey data for

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[4]   The Current Population Survey's Veterans Supplement collects some information on veterans' use of workforce services, but without enough detail and for too small a sample to be useful for the purposes of this study.

the same sample of individuals. This hybrid approach is attractive, in that it would provide multiple options to collect different types of data while reducing survey costs. But the hurdles are high.

If starting from a survey, that approach would require gathering identifiers—name, date of birth, SSN—from survey respondents. In the current identity-theft-aware environment, refusal to provide that information seems likely to be so common as to vitiate the strategy.[5]

Conversely, starting from administrative data requires contact information—address, telephone number, email—and permission to contact in order to field the survey. Recovering contact information from name and date of birth is possible; however, gaining access to administrative data with permission to contact is less likely. DoD has shared such information in its existing Veterans' Data Exchange Initiative data use agreement with DOL, but the agreement strictly prohibits contacts beyond one-time emails. The IRS, SSA, and OCSE have not historically released such required identifiers. The likeliest possible exception would be if the study were able to obtain identifiers through state-held workforce data. But again, the challenges to arranging agreements with states to obtain such identified data are significant.

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[5]   For example, see the work of Czajka, Mabli, and Cody (2008), documenting challenges faced by SSA and Census because of increasing rates of refusal to report SSNs.

1.   Overview

Section 502 of the Jeff Miller and Richard Blumenthal Veterans Health Care and Benefits Improvement Act of 2016 (PL 114-315) requires a "longitudinal study of job counseling, training, and placement service for veterans."[6] There are many ways to conduct such a study, but these options vary greatly in their cost, logistical feasibility, and capacity to provide conclusive evidence to answer the specified research questions. To address this requirement, the U.S. Department of Labor (DOL) issued Solicitation No. 1605DC-17-R-00019 for a design project. On September 25, 2017, DOL's Chief Evaluation Office (CEO) awarded the contract for "**Veterans' Employment and Training Services (VETS) Research Study Design**" to Abt Associates and its partners, RAND Corporation and Capital Research Corporation.

This *Knowledge Development Report* summarizes what has been learned from key informant interviews and review of the extant literature. Crafting a study design that rigorously addresses all of the relevant research questions entails a number of challenges. The design must be based on a thorough understanding of the legislative requirements, relevant programs and services, prior research, potentially relevant data sources, and analytic options.

This document's purpose is to lay the groundwork for developing such a design for a study that can answer those research questions in a cost-effective manner.

This opening chapter discusses basics about the VETS programs: Section 1.1 provides a logic model intended to capture the influences on veterans' employment outcomes that the study design must account for. It is followed by a discussion of the structure of the remainder of the document (Section 1.2) and this project's capstone document, the *Evaluation Design Options Report* (*EDOR*) (Section 1.3).

1.1   Logic Model for AJC Services to Veterans in AJCs

Veterans receive DOL workforce services in American Job Centers (AJCs), both from programs serving the general public and from veterans-specific VETS programs. Exhibit 1.1 provides a graphical representation of a logic model for the impact of those services—the program, as well as characteristics of participants and their surrounding environments that also can potentially influence their employment outcomes. Greater detail on veterans-serving employment programs can be found in Chapter 4.

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[6]   https://www.congress.gov/114/plaws/publ315/PLAW-114publ315.pdf

Exhibit 1.1. A Logic Model for Veterans-Serving Employment and Training Program Services in AJCs
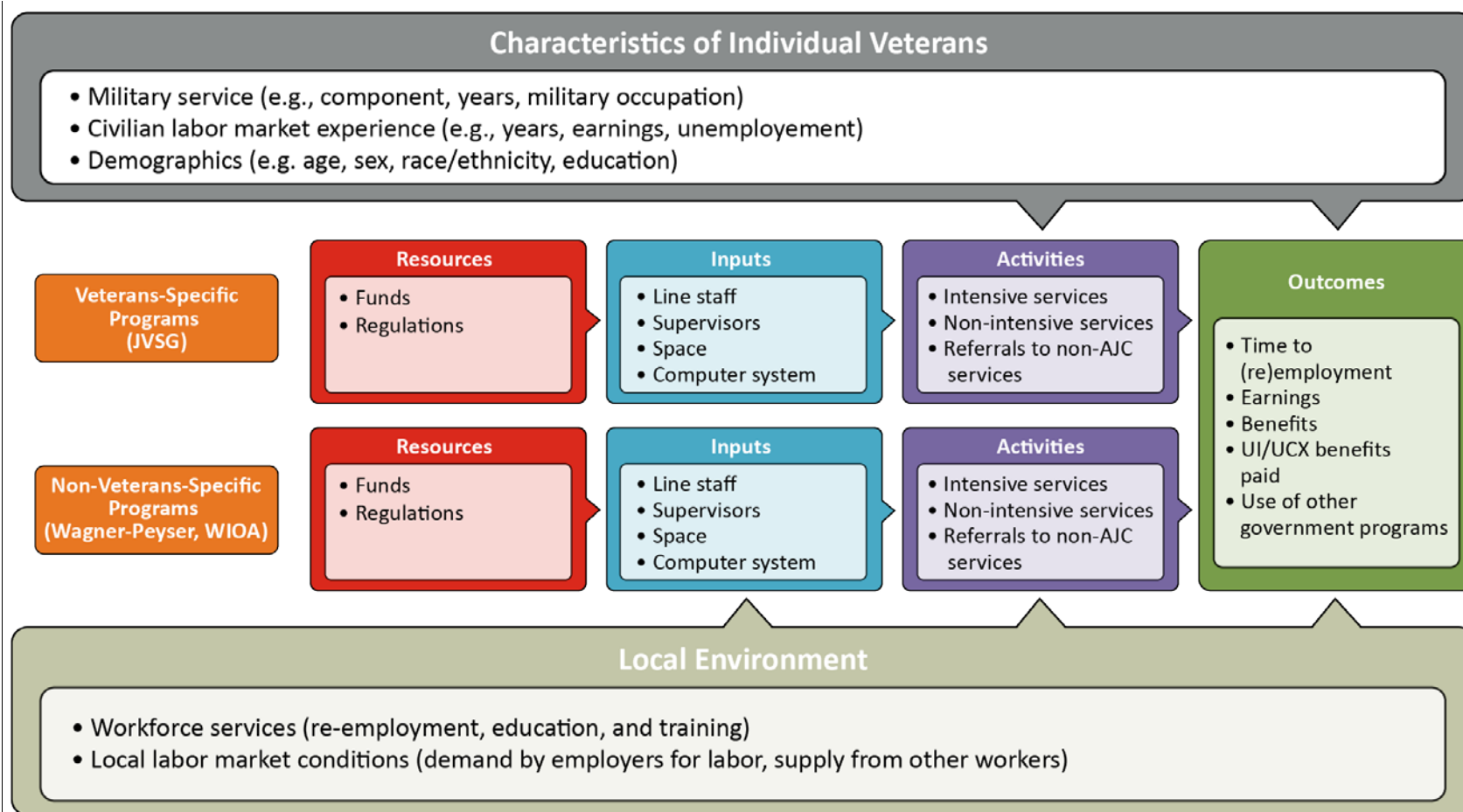
Key: AJC/American Job Center. JVSG/Jobs for Veterans State Grants program. UCX/Unemployment Compensation for Ex-Servicemembers. UI/Unemployment Insurance. WIOA/Workforce Innovation and Opportunity Act.

1.1.1   Program Elements and Aims

The middle two rows of Exhibit 1.1 depict the key steps in the logic model. There are two rows. The top row represents veterans' specific workforce services through its Jobs for Veterans State Grants (JVSG; see Exhibits 1.2 and 1.3 and Chapter 4 for more discussion). The second row represents non-veterans' specific workforce services including Wagner-Peyser programs and Workforce Innovation and Opportunity Act (WIOA; again, see Exhibit 1.2 and Chapter 4 for more discussion). By statute, veterans receive "priority of service" for non-veterans-specific workforce services.

For each of the two types of services. :

- *Resources*. DOL provides funds to states for veterans-specific and non-veterans-specific workforce services.[7]

- *Inputs*. States use VETS funding to acquire the inputs for VETS program services. Those inputs consist of line staff—Disabled Veterans' Outreach Program specialists (DVOPs) and Local Veterans' Employment Representatives (LVERs)—who interact directly with veterans and employers; supervisors of those line staff and higher-level managers; space; computer systems; and online assessment and job search resources. DVOPs assist veterans with "significant barriers to employment" (SBEs). LVERs work with employers to meet their workforce needs by hiring veterans. Understanding the details of those inputs will be crucial for any cost-benefit analysis (see Section 8.4).[8] WIOA and Wagner-Peyser fund a corresponding set of staff and infrastructure serving a general population, including veterans. States pass on funds to local Workforce Development Boards (WDBs), which use these multiple funding streams to support and organize services in AJCs, designed to be workers' one-stop shop for all government-funded employment and training services.

- *Activities*. AJCs use those inputs to generate activities; that is, the services provided by the workforce system to workers. The focus of the VETS study is on services to veterans. The authorizing statute for the study characterizes those services as "intensive" or "non-intensive[9]," where intensive services are activities involving substantial staff assistance, such as development of individualized employment plans, job search assistance, case management, and job placement. In contrast, non-intensive services are lighter-touch services that are primarily self-service, with some staff help, such as accessing online tools available at the AJC. Some workshops that do not involve ongoing work with a staff member also might be considered non-intensive.

- *Outcomes*. These outputs are intended to improve labor market outcomes for veterans. In the short term, labor market outcomes of interest include faster re-employment and lower payments from

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[7]   In most but not all states, funds are allocated to the state workforce agency (Rosenberg, Strayer, Boraas, English, and Khemani, 2015).

[8]   Every 5 years, state workforce agencies submit a multi-year Jobs for Veterans State Grants state plan, which generally includes a narrative description of the populations of veterans that will receive targeted services, provisions for priority of service for veterans and other eligible persons, and performance goals (*JVSG Program Fact Sheet,* 2017).

[9]   WIOA authorization introduced a new terminology, with "individualized career services" replacing "intensive services." In our AJC visit, we found that the staff we spoke with continued to use the term "intensive." We use the terms interchangeably, but rely primarily on the term "intensive," both to be consistent with statute and for the purposes of parsimony.

Unemployment Compensation for Ex-Servicemembers (UCX) and Unemployment Insurance (UI). In the longer term, the goal of workforce programs is better jobs and stable employment for veterans. The key dimension of better jobs is earnings. Other dimensions include hours worked, hourly wage, fringe benefits, and shift work/regularity of earnings. In turn, higher earnings should lead to radiating impacts. From the government perspective, those impacts include smaller payments from public programs (e.g., Medicaid, Social Security Disability Insurance, Vocational Rehabilitation, Supplemental Nutrition Assistance Program, housing assistance, Affordable Care Act subsidies) and larger tax payments (e.g., income taxes, payroll taxes). From the household perspective, those radiating impacts include greater food and housing security.

Exhibit 1.2. Key DOL Workforce Programs Available to Veterans at AJCs

Program	Population Served	Program Description
Wagner-Peyser Employment Service	General population of job-seekers	Nearly all individuals who register at an AJC are enrolled in the Wagner-Peyser-funded Employment Service. Established in 1933, ES funds a range of job search assistance, referrals, and (re)employment services to job-seekers. Services to job-seekers are limited to **basic career services** (non-intensive). ES also funds services to employers to find job candidates. Consistent with its focus on bringing job-seekers and employers together, ES typically funds states' online job banks.
Workforce Innovation and Opportunity Act	General population of job-seekers	WIOA funds employment and training services for adults, dislocated workers, and youth. WIOA's **basic career services** (non-intensive) are available to all job-seekers. These typically involve light-touch or one-time staff assistance—such as referrals to other services, provision of labor market information, and eligibility assessments. These are not always readily differentiable from Wagner-Peyser-funded services. WIOA's **individualized career services** (intensive services), by contrast, typically involve more in-depth and ongoing staff involvement—including comprehensive assessments, development of an individualized employment plan, and case management. These services are available to individuals whom AJC staff deem in need of more-intensive assistance to obtain or retain employment. In addition, WIOA funds classroom training, on-the-job training, and work experience.
Jobs for Veterans State Grants	Veterans	JVSG-funded services are provided by two types of staff: Disabled Veterans' Outreach Program specialists and Local Veterans' Employment Representatives: **DVOPs** provide intensive (re)employment services to veterans (and eligible spouses) who are disabled or have other significant barriers to employment. The set of services are similar to those provided via WIOA-funded counselors, but DVOPs are trained to meet the particular needs of veterans with SBEs. **LVERs** work with employers to help them fill their talent needs by hiring veterans. LVERs may collaborate with DVOPs for help identifying candidates for jobs their employer partners have open.

Key: AJC/American Job Center. ES/Employment Service. JVSG/Jobs for Veterans State Grants program. DVOP/Disabled Veterans' Outreach Program specialist. LVER/Local Veterans' Employment Representative. SBE/significant barrier to employment. WIOA/Workforce Innovation and Opportunity Act.

Note: See the following DOL websites for more detail on these programs:

- Wagner-Peyser Employment Service: *https://www.doleta.gov/performance/results/wagner-peyser_act.cfm*
- Wagner-Peyser Labor Exchange: *https://www.doleta.gov/programs/wagner_peyser.cfm*
- WIOA: *https://www.doleta.gov/WIOA/Overview.cfm*
- JVSG: *https://www.dol.gov/vets/grants/state/Jobs-for-Veterans-State-Grants-Program-Fact-Sheet-2017.pdf*

Exhibit 1.3. Key Statutes and Guidance

Source	Detail
Statutes	• **Title 38, U.S. Code §4102A(b)5**: authorizes Jobs for Veterans State Grants funds provided to each state • **Title 38, U.S. Code §4103A**: defines the role and responsibilities of the Disabled Veterans' Outreach Program • **Title 38, U.S. Code §4104**: defines the role and responsibilities of the Local Veterans' Employment Representative program • **Title 38, U.S. Code §4104(4) and 4211(4)**: defines "eligible veteran" • **VOW to Hire Heroes Act of 2011 (PL 112-56)**: prohibits JVSG-funded staff from performing non-veteran-related duties, and authorizes DOL to reduce funding for non-compliant states
Guidance	• **VPL 07-09**: provides guidance on implementation of the priority of service requirement for veterans and eligible spouses in all qualified workforce programs • **VPL 01-10**: details JVSG recurring report requirements • **VPL 03-14**: directs DVOPs to prioritize services for veterans with a significant barrier to employment and other categories of veterans • **TEGL 03-15**: describes career service provisions authorized by the Workforce Innovation and Opportunity Act • **TEGL 19-16**: maps career service activities to the appropriate service categories

Key: DVOP/Disabled Veterans' Outreach Program specialist. JVSG/Jobs for Veterans State Grants program. TEGL/Training and Employment Guidance Letter. VPL/Veterans Program Letter.

1.1.2   Characteristics of the Veterans Served

Above this main sequence of steps (Resources/Inputs/Outputs/Outcomes) in the logic model, Exhibit 1.1 depicts the characteristics of individual veterans served in AJCs that may shape which services are provided, how they are delivered, and ultimately, the outcomes achieved. Specifically, the veteran population may differ across several important dimensions:

- *Military service*—component (e.g., Army), years of service, rank, military occupation, service-connected disability.

- *Civilian labor market experience*—years of civilian employment, earnings, past unemployment spells.

- *Demographic characteristics*—age, sex, race/ethnicity, education, health (including PTSD/Post-Traumatic Stress Disorder and physical and mental limitations).

1.1.3   Influences from the Local Environment

Below this main sequence of steps in the logic model, Exhibit 1.1 depicts the characteristics of the local economic environment that might influence how services are delivered and the resulting outcomes. Key dimensions include these:

- *VA Employment Supports.* The VA provides in-person and online supports to veterans seeking employment. Veterans with a service-connected disability rating of 10 percent or more have access to one-on-one support, career counseling, and training through the Vocational Rehabilitation and Employment (VR&E) program. The Veteran Employment Service Office (VESO) provides employment services and information at veteran outreach events and career fairs. The VA provides links to a range of online employment resources—including tools to help translate military experience to civilian jobs, interest profiles, networking resources, job fairs for veterans, federal and civilian job

listings, and find other sources for employment services (including links to AJCs).[10] Finally, the VA provides tuition assistance for education and training through the GI Bill.

- *Other Workforce Services.* AJCs provide some services directly, but to a great extent they serve as referral agencies. The effectiveness of the referrals depends on the availability and quality of (re)employment, education, and training services in the local environment—at community colleges, through the VA, from providers of employment services and job training, and other organizations..

- *Local Labor Market Conditions.* Labor markets are local, and the potential impact of various interventions (e.g., training for a specific occupation) will vary with the nature of demand (i.e., local employers) and supply (i.e., other workers). That labor demand can be general, or may specifically reflect an interest in hiring veterans—resulting from effort to urge employers to consider veterans (e.g., the HIRE Vets Medallion program)

Any evaluation should try to understand each of the steps of this logic model, as well as how outcomes are potentially influenced by veterans' characteristics and the local environment.

1.2   Structure of this Document

The balance of this document proceeds as follows:

- Chapter 2 details the statutory requirements for research questions that the study must address.

- Chapter 3 provides background on veterans and their labor market experiences.

- Chapter 4 describes programs aimed at helping veterans in the labor market and what we know about the impact of those programs.

- Chapter 5 discusses extant data sources that could potentially be used in the study.

- Chapter 6 discusses the ability of extant data sources to address the research questions, and the possibility of a study-specific survey.

- Chapter 7 discusses strategies to match across those data sources, and previous efforts to do so.

- Chapter 8 discusses issues related to methods for describing the VETS programs, estimating their impact, and estimating their cost-benefit.

- Chapter 9 discusses broad considerations in designing and choosing between design options.

- Chapter 10 provides an early discussion of broad design options, considering feasibility, cost, and strength of analyses that could be supported.

- Chapter 11 discusses the major knowledge development needs identified in this paper and the relation of this document to the project's *Evaluation Design Options Report*.

- Appendix A describes knowledge development activities.

- Appendix B provides copies of forms used by DoD to collect study-relevant data on separating service-members (DD Forms 2648 and 214).

- Appendix C provides detail on survey costs in support of the discussion in Chapters 9 and 10.

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[10]   For example, see https://www.vets.gov/employment/job-seekers/.

1.3   This Report and the *Evaluation Design Options Report*

This *KDR* provides background for the *Evaluation Design Options Report* (*EDOR*; Klerman, et al., 2018). The *EDOR* discusses possible approaches to addressing the implementation, descriptive, impact, and cost-benefit research questions, consistent with DOL's solicitation and statutory requirements. The report explores a range of possible evaluation activities and designs whose results might improve DOL's programs and thereby the lives of veterans. That report will describe the strengths and limitations of each option—including their cost, logistical feasibility, ability to produce strong evidence (internally valid, externally valid, precise, etc.), and ability to fulfill particular statutory requirements. Beyond describing individual options, the *EDOR* will discuss how different options might be combined in pursuit of a research agenda to meet DOL's learning needs.

2. Study Design Objectives and Parameters

This chapter describes the background for understanding the knowledge and design options to be developed. That includes describing the specific research questions to be addressed. Section 2.1 starts by reviewing DOL's solicitation (1605DC-17-R-00019, "Veterans' Employment and Training Services (VETS) Research Study Design") for this design project and the aims and research questions raised therein. That solicitation describes the objectives of the design project as being to:

> *"…develop evaluation design recommendations that will allow the Department, solely or in partnership with other Federal agencies, to implement an evaluation(s) to meet the requirements of H.R. 6416 (Sec 502) and add to the evidence base on veterans' workforce development and employment assistance needs."*

The subsequent sections briefly describe the history of H.R. 6416(Section 2.2), provide the specific statutory language (Section 2.3), and discuss study parameters indicated in that language—including parameters which DOL may need to further define (Section 2.4).

2.1 DOL's Solicitation

DOL's solicitation begins by characterizing the purpose of the current project as being to: "develop a research study design that meets the legislative requirements of Section 502, Jeff Miller and Richard Blumenthal Veterans Health Care and Benefits Improvement Act of 2016." However the document goes on to express an interest in more broadly building the "evidence base on veterans' workforce development and employment assistance needs."

The solicitation describes the specific research questions of interest as follows:

> *The contract must specifically focus on designing an evaluation study of the following veteran's groups over a period of at least 5 years:*

- *Veterans who have received intensive services from an AJC;*
- *Veterans who did not receive intensive services but who otherwise received services from an AJC.; and*
- *Veterans who did not seek or receive services from an AJC.*

> *Final research questions will be agreed upon under Task 2 in this contract. However, research questions to be answerable based on the proposed evaluation design shall include the following, at a minimum:*

- *What are the types and packages of services or policy approaches provided under American Job Center's job counseling, training, and placement service for veterans?*
- *What key components or approaches are successful or contribute to the success of job counseling, training, and placement service for veterans?*
- *What are the costs of job counseling, training, and placement service for veterans? Do estimates of benefits of providing services or implementing policy outweigh the costs of those initiatives?*
- *What is the average number of months the studied veterans served on active duty?*
- *What are the disability ratings of the studied veterans?*
- *What are the types of unemployment benefits received by the studied veterans? If any?*

- *What is the average number of months the studied veterans were employed during each of the five years under study?*
- *What is the average annual starting and ending salaries of the studied veterans who were employed during each of the five years under study?*
- *What is the average annual income of the studied veterans during each of the five years under study?*
- *What is the average total household income of the studied veterans during each of the five years under study?*

The requirement to develop options for DOL to consider for conducting a study covering three specific sets of veterans is drawn from the statute, as are a subset of the specific research questions presented. As noted in the solicitation, that set of questions were the "minimum" set, with the final set of questions to be established in the project's work plan. Exhibit 2.1 lists that final set of research questions established in the work plan,[11] under the guidance of CEO. It encompasses the full set of questions presented in H.R. 6416, along with further questions to build the evidence base.

The research questions are of four types:

i.   Implementation
ii. Outcome/Descriptive
iii. Impact
iv. Cost-benefit

Exhibit 2.1 numbers the research questions. We use that numbering as a shorthand in what follows. The exhibit also categorizes questions by those types. The first two types are descriptive. Implementation questions examine the nature of programs. Outcome/descriptive questions examine the characteristics of program participants, their program participation, and their later outcomes—particularly regarding employment and earnings). Impact questions examine how receipt of AJC-provided services affect outcomes, and if that effect differs by the services received or the program model used to provide them. Cost benefit questions draw on impact findings, and examine how the total program costs correspond to the benefits produced (to participating veterans, the government, and society).

Questions from statute are denoted by "‡". The statutory questions are predominantly descriptive, gathering information on:

- *Veterans' characteristics*—time on active duty (RQ 4), disability rating (RQ 5), type of discharge (RQ 15), demographic information (RQ 19).

- *Utilization patterns*—educational assistance (RQ 16), veterans rehabilitation programs (RQ 17), contact with One-Stop Career Center as part of Transition GPS Program (RQ 18).

- *Outcomes*—receipt of Unemployment Insurance benefits (RQ 6), months employed (RQ 7), , employment status (RQ 8), starting and ending salaries (RQ 9), average annual income (RQ 10), total household income (RQ 11), own principal residence (RQ 12).

- *Subjective perceptions*—veteran believes that the services helped in becoming employed (RQ 13), retain employment for one or more years (RQ 14(i)), and earn higher wage or salary (RQ 14(ii)).

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[11] Version submitted December 29, 2017.

Exhibit 2.1. Final Set of Research Questions from the Project Work Plan

Research Question (RQ)		Type of Question
RQ 1.	What are the types and packages of services or policy approaches provided under American Job Center's job counseling, training, and placement service for veterans?	Implementation
RQ 2.	What key components or approaches are successful or contribute to the success of job counseling, training, and placement service for veterans?	Impact
RQ 3.	What are the costs of job counseling, training, and placement service for veterans?[‡] Do estimates of benefits of providing services or implementing policy outweigh the costs of those initiatives?[‡]	Cost-benefit
RQ 4.	What was the average number of months the individual served on active duty? [‡]	Outcome/Descriptive
RQ 5.	What are the disability ratings of the individual?[‡]	Outcome/Descriptive
RQ 6.	Did the individual receive unemployment benefits?[‡] What type of unemployment benefits?	Outcome/Descriptive
RQ 7.	What was the average number of months the individual was employed during the year covered by the report?[‡]	Outcome/Descriptive
RQ 8.	What is the employment status of each individual?[‡] What is the average number of months the studied veterans were employed during each of the 5 years under study?	Outcome/Descriptive
RQ 9.	What was the average annual starting and ending salaries of the individual during each of the 5 years under study?[‡]	Outcome/Descriptive
RQ 10.	What was the average annual income of the individual during each of the 5 years under study?[‡]	Outcome/Descriptive
RQ 11.	What was the average total household income of the individual during each of the 5 years under study?[‡]	Outcome/Descriptive
RQ 12.	Did the individual own their principal residences?[‡]	Outcome/Descriptive
RQ 13.	Does the individual believe that any service provided by a Disabled Veterans' Outreach Program specialist or Local Veterans' Employment Representative helped the individual to become employed?[‡]	Outcome/Descriptive
RQ 14.	For those individuals who believe that such services helped the individual to become employed, (i) did the individual retain the position of employment for a period of 1 year or longer;[‡] and (ii) does the individual believe that such a service helped the individual to secure a higher wage or salary? [‡]	Outcome/Descriptive
RQ 15.	Under what conditions was the individual discharged or released from the Armed Forces?[‡]	Outcome/Descriptive
RQ 16.	Has the individual used any educational assistance to which the individual is entitled under this title?[‡]	Outcome/Descriptive
RQ 17.	Has the individual participated in a rehabilitation program under chapter 31 of this title?[‡]	Outcome/Descriptive
RQ 18.	Did this individual have contact with a One-Stop Career Center employee while attending a workshop or job fair under the Transition GPS Program of the Department of Defense?[‡]	Outcome/Descriptive
RQ 19.	What are the demographic characteristics of this individual?[‡]	Outcome/Descriptive

Key: ACS/American Community Survey. AJC/American Job Center. CPS/Current Population Survey. IRS/Internal Revenue Service. NDNH/National Directory of New Hires. SSA/Social Security Administration. UI/Unemployment Insurance.

As we discuss in detail in Section 6.1, many of these RQs can be addressed—at least in part—from administrative data.

The further questions to be addressed by this design options study, include implementation (RQ 1), impact (RQ 2), and cost-benefit (RQ 3) questions.[12]

- RQ-1 requires an *implementation analysis of policy and AJC service delivery approaches*. This RQ could be addressed by interviews with DOL national staff, and state and local staff involved in designing programs to be implemented in AJCs. It would probably be preferable to conduct an implementation study with site visits to local offices, surveys of AJCs, and analyses of service receipt data (see Section 8.1).

- RQ 2 considers the *causal impact* on outcomes of receipt of services from the workforce system (including VETS programs). Addressing a causal impact RQ requires different methods than addressing descriptive RQs (see Sections 8.2 and 8.3).

- RQ 3 considers the costs—overall and relative to benefits—of the services provided to veterans in AJCs. Addressing such *cost-benefit* RQs requires different methods and collection of data on costs (see Section 8.4).

Chapter 4 of this this report describes what is known from implementation studies about services provided to veterans in AJCs and the impact of those programs. Chapter 8 provides a high-level overview of methods of implementation, impact, and cost-benefit analysis to answer. A number of options are available to answer RQ 1, RQ 2, and RQ 3. The project's Evaluation Design Options Report explores those options—together with the virtues and limitations of each—in detail.

The statute contains language that raises particular challenges relevant to developing design options. The major challenge relate to obtaining the data required. The remainder to Chapter 2 defines those challenges by examining the history and language of the legislation.

2.2 Legislative History

The legislation that mandates the proposed study appears to have begun as HR 4150, Veterans Employment and Training Service Longitudinal Study Act of 2014 (introduced March 5, 2014).[13] In hearings before the House Committee on Veterans' Affairs, Subcommittee on Economic Opportunity on March 25, 2014, Rep. Paul Cook (R-CA-08), the sponsor of the legislation, motivated it as ensuring[14]

> *… that veterans are receiving effective and successful employment training services. This bipartisan bill authorizes an independent organization to collect [and] analyze data on the effectiveness of the Department of Labor's Veterans Employment and Training Service.*

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[12] DOL's solicitation also adds some additional detail on descriptive/outcome questions—asking about the types of unemployment compensation received (RQ6) and specifying that employment status of individuals in each year be measured in terms of number of months employed during that year (RQ8).

[13] https://www.congress.gov/bill/113th-congress/house-bill/4150?q=%7B%22search%22%3A%5B%22The+Veterans+Employment+and+Training+Service++Longitudinal+Study+Act%22%5D%7D&r=1

[14] https://www.gpo.gov/fdsys/pkg/CHRG-113hhrg87672/html/CHRG-113hhrg87672.htm

The study will focus on veterans who have received intensive services from two programs under VETS, … the Disabled Veterans Outreach Program and the Local Veterans Employment Representatives, LVER. The study will track the employment status of veterans who receive these services, determine if the program contributed to their employment, monitor the employment retention rate, and determine if the services provided helped them increase their average earnings. A report on the findings will be presented to the Committee on Veterans Affairs in the House and Senate every year for the next 5 years.

Congress has a duty to provide our veterans with the best employment services possible. Simply authorizing these program[s] is not enough. We have to follow up and ensure that they are working as intended. An analysis of long-term outcomes is precisely the type of oversight Congress needs to determine the effectiveness of these programs and to ensure their success.

In those same hearings, then DOL Assistant Secretary for Veterans' Employment and Training Keith Kelly stated (emphasis added):

Ultimately the department welcomes the opportunity to better understand the current impact of the services we provide for veterans *so that we may continue to further enhance our programs and therefore improving veteran' quality of life. We are ready to ensure that the legislation and the resulting study are well crafted. Thus we do look forward to working with the committee on clarifying the goals and objectives of that survey.*

The Department of Labor sincerely appreciates the support of the committee and we strive to provide higher quality, better targeted services to our nation's veterans.

Beyond the hearings just quoted, there does not appear to have been any action on HR 4150. The same legislation appears to have been reintroduced, again by Rep. Cook, as HR 832, on February 10, 2015.[15] Additional hearings were held before the Economic Opportunity Subcommittee on June 2, 2015, on HR 832 and on HR 2275 (Jobs for Veterans Act of 2015), which would have moved VETS from DOL to the U.S. Department of Veterans Affairs (VA).[16] Rep. Cook made a statement similar to the one he had made at the previous hearings. Steve Gonzalez of the American Legion expressed mixed opinions about the bill and the VETS programs:

The American Legion would support a longitudinal study of the job counseling, training, and employment placement services, JVSG services, only if the bill were altered to direct the Secretary of Veterans Affairs to contract for this study as opposed to the Secretary of Labor.

In 2012, a similar proposal was made to study the Department of Labor employment services. At this time, Chairman [Jeff] Miller has stated more study was not needed and, quote, "We have already study after study over the years that say the program does not work." The American Legion agrees with the chairman's assessment. A longitudinal assessment of the Department of Labor VETS performance can already be read in the 16

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[15]   https://www.congress.gov/bill/114th-congress/house-bill/832?q=%7B%22search%22%3A%5B%22The+Veterans+Employment+and+Training+Service++Longitudinal+Study+Act%22%5D%7D&r=2

[16]   https://ia601904.us.archive.org/34/items/gov.gpo.fdsys.CHRG-114hhrg98640/CHRG-114hhrg98640.pdf

> *[U.S. Government Accountability Office] and [Office of Inspector General] reports dating back to 1997. All reports reveal negative findings.*
>
> *Therefore, such a detailed study would be better implemented after JVSG and the [Homeless Veterans' Reintegration Program] are moved to VA and set under the purview of the Secretary of Veterans Affairs. The American Legion supports this legislation.*

Rick Weidman of the Vietnam Veterans of America made similar remarks, as did Christopher Neiweem of the Iraq and Afghanistan Veterans of America. In this session, the legislation passed the Subcommittee on Economic Opportunity, but appeared to have died in the full Veterans Affairs Committee.

Then the provision for the longitudinal study of veterans appears to have been incorporated unchanged into HR 6416, the Jeff Miller and Richard Blumenthal Veterans Health Care and Benefits Improvement Act of 2016.[17] HR 6416 was introduced very late in the session (December 1, 2016) by Rep. Phil Roe (R-TN-1), rules were suspended, and the bill was passed unanimously by the House on December 6, 2016, after 40 minutes of debate. The bill was passed by the Senate without amendment by voice vote on December 10, 2016. It was signed into law on December 16, 2016.

2.3   Statutory Language

The final statutory language is as follows[18]:

> *SEC. 502/Sec. 4115. LONGITUDINAL STUDY OF JOB COUNSELING, TRAINING, AND PLACEMENT SERVICE FOR VETERANS.*
>
> *(1) The Secretary shall enter into a contract with a non-government entity to conduct a longitudinal study of a statistically valid sample of each of the groups of individuals described in paragraph (2). The contract shall provide for the study of each such group over a period of at least 5 years.*
>
> *(2) The groups of individuals described in this paragraph are the following:*
>
>> *(A) Veterans who have received intensive services.*
>>
>> *(B) Veterans who did not receive intensive services but who otherwise received services under this chapter.*
>>
>> *(C) Veterans who did not seek or receive services under this chapter.*
>
> *(3) The study required by this subsection shall include the collection of the following information for each individual who participates in the study:*
>
>> *(A) The average number of months such individual served on active duty.*
>>
>> *(B) The disability ratings of such individual.*
>>
>> *(C) Any unemployment benefits received by such individual.*
>>
>> *(D) The average number of months such individual was employed during the year covered by the report.*
>>
>> *(E) The average annual starting and ending salaries of any such individual who was employed during the year covered by the report.*

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[17]   https://www.congress.gov/bill/114th-congress/house-bill/6416?q=%7B%22search%22%3A%5B%22Jeff+Miller+and+Richard+Blumenthal+Veterans+Health+Care+and+Benefits+Improvement+Act+of+2016%22%5D%7D&r=1

[18]   https://www.congress.gov/114/plaws/publ315/PLAW-114publ315.pdf

(F) *The average annual income of such individual.*

(G) *The average total household income of such individual for the year covered by the report.*

(H) *The percentage of such individuals who own their principal residences.*

(I) *The employment status of such individual.*

(J) *In the case of such an individual who received services under this chapter, whether the individual believes that any service provided by a Disabled Veterans' Outreach Program specialist or Local Veterans' Employment Representative helped the individual to become employed.*

(K) *In the case of such an individual who believes such a service helped the individual to become employed, whether—*

(i) *the individual retained the position of employment for a period of 1 year or longer; and*

(ii) *the individual believes such a service helped the individual to secure a higher wage or salary.*

(L) *The conditions under which such individual was discharged or released from the Armed Forces.*

(M) *Whether such individual has used any educational assistance to which the individual is entitled under this title.*

(N) *Whether such individual has participated in a rehabilitation program under chapter 31 of this title.*

(O) *Whether such individual had contact with a One-Stop Career Center employee while attending a workshop or job fair under the Transition GPS Program[19] of the Department of Defense.*

(P) *Demographic information about such individual.*

(Q) *Such other information as the Secretary determines appropriate.*

(b) *Annual Report—By not later than July 1 of each year covered by the study required under subsection (a), the Secretary shall submit to the Committee on Veterans' Affairs of the Senate and the Committee on Veterans' Affairs of the House of Representatives a report on the outcomes of the study during the preceding year.*

2.4   Parameters for Study Design Raised by the Statutory Language

This statutory language presents several requirements for study design that warrant discussion. Some of the parameters described will need to be more fully defined by DOL.

1. ***The statute requires a "study of a statistically valid sample of each of the groups of individuals."*** A "statistically valid sample" is one that is representative of some underlying population of interest. A study with data for all veterans (see point 3 below for a discussion of defining "veterans") would clearly be a "statistically valid sample." Standard survey methods—perhaps selecting states and then selecting veterans in those states—are not as robust. Samples would be smaller. In addition, operational issues—incomplete sampling frame, differential non-response—imply imperfect statistical validity. Statistical methods—for example, weighting—partially control for these

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[19]   Formerly the Transition Assistance Program (TAP).

operational issues and for most purposes those methods are considered sufficient to assure a "statistically valid sample", or at least as close to a statistically valid sample as is feasible with existing methods. Often, a national sample is not feasible; instead, analyses use some convenience sample—for example applying standard survey methods to data for some purposively selected or volunteering states. Sometimes, in net, such a convenience sample of states is the best available option. For example, this approach is often used in selecting sites for random assignment evaluation.

As is discussed at the start of Chapter 5, when available, administrative data are usually preferable to survey data. Relative to survey data, administrative data not only have broader coverage but also are typically less expensive, provide information on more time points, are less subject to response bias, and are not subject to selective non-response (in particular, because some sample members could not be located or refused to respond).

However, as is discussed at the end of Chapter 5, administrative data do have shortcomings. From a content perspective, they often do not include information on all of the concepts of interest. From a process perspective, because of a combination of statutory and non-statutory considerations, it has become increasingly difficult, and sometimes impossible, to get access to administrative data.

2. ***The statute requires the study is to be "longitudinal … over a period of at least 5 years."*** Many designs could satisfy this requirement. One approach would be a longitudinal survey; that is, an attempt to repeatedly interview—perhaps annually—the same sample of veterans.[20] Administrative data from multiple periods of time—for example, quarterly—is another potential source of data to satisfy this requirement. A final option is some combination of administrative data and survey data; for example, a survey at the beginning of the 5-year window, with administrative data for the intervening periods.

3. ***The statute does not define*** **veterans**. The VETS internal definition provides a useful starting point for discussion: Those discharged on conditions other than dishonorable from (1) the active components (Army, Navy, Air Force, Marines, Coast Guard) or (2) the Reserve Components (National Guard and Reserve) who had been deployed on active duty for more than 180 consecutive days. Legislation in 2016 allowed former Reserve Component members who served 20 years or longer to be considered veterans, irrespective of past active duty deployment.[21] Although JVSG services are available to "eligible spouses" of veterans, the statute does not list spouses as of interest in the study. This design project will consult with DOL about its preferred definition.

4. ***The statute calls out three groups of veterans for separate consideration:***

   − those receiving *intensive* services;
   − those using only *non-intensive* services; and
   − those receiving *no* services.

But it does not define *intensive*. Under Veterans Program Letter (VPL) 07-10, VETS specified that DVOPs were to focus on providing intensive services and that JVSG was aligning its definition of intensive services with the Workforce Investment Act (WIA) definition (DOL, 2010). WIA's intensive services are a set of staff-provided services made available to those individuals who need

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[20]   Note that the survey non-response challenges described become more severe with subsequent follow-up waves.

[21]   See https://www.army.mil/article/180159/guard_and_reserve_members_receive_veteran_status.

help beyond the universally available basic services in order to obtain or retain employment. WIOA changed the label "intensive services" to "individualized career services," but retained the same basic definition (DOL, 2015). (See Exhibit 2.1 for a description of those services and how they differ from "core services," also known as "basic career services").

Under JVSG, DVOPs are to limit provision of intensive services to "eligible veterans and eligible spouses who" have an SBE (DOL, 2014c). Those barriers are being a disabled or special disabled veteran, homeless, a recently separated service member who has been unemployed for more than 27 consecutive weeks in the past year, or a recently released ex-offender; lacking a high school diploma or equivalent; or meeting WIOA's standard for being low income. Other AJC staff (principally WIOA-funded staff), are to provide intensive services (aka individualized career services) to individuals (and only those individuals) for whom they determine such services are "appropriate … to obtain or retain employment" (DOL, 2015). Having an SBE is not an eligibility requirement to receive WIOA intensive services, and individuals served may be veterans or non-veterans.

The composition of the study groups depends on how intensive services are defined, and there are thus at least two possible definitions of *intensive*: The first would limit "intensive services" to those provided by VETS programs. The second also would include the WIOA equivalent of WIA's "intensive services." Rep. Cook's statement (quoted in Section 2.1) seems to imply the first definition. DOL's solicitation for this design options study refers more broadly to veterans who "have received intensive services from an AJC"—implicitly covering both veterans-specific (JVSG) and broader workforce programs.

Studying only JVSG programs would substantially reduce the number of veterans in the first two study groups above, and particularly the second, since few veterans served by JVSG receive only non-intensive services (see Section 4.6). That limitation could make the task of obtaining needed administrative data easier. It would also greatly increase the cost of fielding a survey in the absence of an existing list of veterans who have received services (see Chapter 9).

Note also that studying only JVSG programs would substantially change the population of interest. By design, JVSG only services veterans with Substantial Barriers to Employment (SBE). Focusing on JVSG programs would relegate veterans without SBE to the "no workforce services" group—even if they had received nonveteran-specific workforce services.

5. *These three groups of veterans are not dynamically stable.* In particular, those in the intensive services group in the first year are unlikely to be in that group in later years. For now, this project is proceeding on the assumption that these three groups are defined based on their use of the workforce system in year 1 and then followed through later years—often with other use of the workforce system. The alternative would be to select a new sample each year based on their use of the workforce system in that year.[22]

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[22] To understand the issues, note that a true **panel survey** (i.e., selecting a sample and following them over time) would answer research questions of the form, "What are both the immediate and longer-term outcomes of (or impacts on) veterans who participate?" By contrast, a **repeated cross-section survey** (i.e., selecting a new sample each period) would answer research questions of the form, "How are characteristics and immediate outcomes of (or impacts on) participants changing over time?"

6. ***There is an explicit statutory requirement to provide separate analyses of these three identified groups of veterans:*** (i) those using intensive services, (ii) those using only non-intensive services, and (iii) those using no services (e.g., see Section 8.4). As discussed in Chapter 6, the requirement of measuring characteristics and outcomes for three separate groups raises a challenge in finding group members that drives the design process and resulting data collection options. The magnitude of the challenge is determined by the size of the rarest group, which, assuming that "intensive services" is defined to cover services provided from both JVSG and non-veterans specific programs in an AJC,[23] is veterans using intensive workforce services. To get a sense of the challenge, note that veterans make up about 9 percent of all adults, and those receiving intensive services via DOL's AJC system appears to make up 1 percent all veterans.[24] As discussed in greater detail in Section 9.3, if the study does not have access to an extant list of veterans who have received intensive services, a very large effort would be required simply to find sufficient numbers of sample members in each of the three groups. Based on these estimates, suppose that the study aimed to obtain a research sample of 4,000 veterans who are using intensive services:

   − Starting with a *list of all adults* and assume a 60 percent response rate, a random digit dialing (RDD) or address-based sampling (ABS) study would need to contact nearly 6.7 million of them in order to yield the target sample of 4,000 veterans who are using intensive services.[25,26]

   − Starting with a *list of all veterans*, the study would need to contact about 668,000 of them. This would be among the largest surveys conducted in the United States in any year—and quite expensive. Furthermore, this design would require a list of veterans plus identifiers (e.g., name, gender, date of birth, last known address, names of close relatives)—and permission to contact the veterans using that information.[27]

   − If we start with a *list of veterans matched to a list of those receiving VETS and WIOA program services*, then the study could pre-select samples of veterans in each of the three groups of interest. Clearly, the list of those receiving services—and what services they received—identifies the third group. Matching to a list of all veterans, any veteran not in the first two groups is in the third group. Given a list of veterans and their group membership, a study could specify the sample in each group. A sample of 2,000 veterans in each group would allow relatively precise statistics and some analysis of subgroups. Such a study with 2,000 veterans in each of three groups would need to complete a total of 6,000 surveys. This would be a moderate-sized survey.[28] (We will see that without both lists—veterans and veterans using workforce services—

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[23]   If the definition were limited to services provided through JVSG, then the non-intensive services only group would be the smallest.

[24]   For detailed estimates of counts of veterans receiving services, see Exhibit 4.3. For detail on the prevalence of veterans from each study group in the population, see Exhibit 9.1.

[25]   As we discuss in Section 6.1, Address-Based Sampling (ABS) is likely to be a more cost-effective approach than is Random Digit Dialing (RDD). But even ABS is likely cost prohibitive in this scenario.

[26]   See Section 9.3 for detail on how the 6.7 million count was derived.

[27]   The U.S. Department of Defense (DoD) has those data. This study will explore conditions under which DoD would provide that list for this study.

[28]   Furthermore, note that with administrative data on service receipt, some analyses could be done on all veterans using administrative data, and those analyses would be sufficient to substantially (but not completely) satisfy

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the required sample sizes are much larger. This is because surveys must be "wasted" finding both veterans and veterans who used workforce services.) As we discuss in detail in Section 5.2.2, such a list of veterans receiving services, with contact information and identifiers, exist at the state level, but not at the national level. Chapter 6 considers several strategies to address this key limitation.

These three scenarios give a sense of the issues. Chapter 10 considers these strategies in more detail, as well as several other strategies.

7. ***The statute implies that the study is focused only on veterans who are in the workforce.*** About half of all veterans are near or past retirement age and no longer in the workforce—i.e., neither employed, nor actively seeking work (see Section 3.1). Those individuals are also unlikely to return to the workforce. Because those individuals are not candidates for workforce services, in most of our discussions we assume that they are not a focus of this study. More narrowly, it may be argued that only job-seekers are relevant, because individuals who are not looking for jobs are not candidates for workforce services. Defining the universe of relevant veterans to include only job-seekers would further influence potential design options.

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the statutory requirement. (We return to this issue in Section 6.1) However, note also that this design would require administrative data on veterans and on receipt of VETS and WIOA program services, probably with identifiers.

3.   Veterans' Characteristics and Labor Market Experiences

The design of the study previewed above needs to build on a solid understanding of veterans' characteristics and their overall labor market experiences, including their use of the public workforce system. This chapter provides that foundation. We begin with a description of veterans' demographic characteristics that are relevant to their labor market opportunities and outcomes (Section 3.1). These characteristics are also pertinent for some of the design options discussed in later chapters.

The chapter then reviews the literature on their labor market experiences and the causal effect of military services on those experiences (Section 3.2)—in particular, unemployment (Section 3.2.1) and earnings (Section 3.2.2). In addition to summarizing the substantive results, the discussion provides preliminary insight into the strengths and limitations of various data sources and analytic methods. We return to extant data sources in Chapter 5 and to methods in Chapter 8.

3.1   Demographic Characteristics of Veterans

The U.S. Department of Defense is the nation's largest employer. There are roughly 1.3 million uniformed service members—Army, Navy, Air Force, Marines—on active duty. Every year about 145,000 people join the (active duty) military and a similar number leave (CNA, 2016).

Almost everyone who serves in the active duty military will at some point leave to enter the civilian labor market. Focusing on active duty enlisted members (i.e., excluding reservists and officers)[29], slightly fewer than 50 percent will leave within 4 years, some 75 percent will leave within 8 years, only about 10 percent will make it to military retirement at 20 years, and only 5 percent will stay beyond 20 years.[30]

The VA and the Census Bureau track veteran demographics through the Current Population Survey (CPS) and the American Community Survey (ACS). The VA estimates that there are about 20 million veterans; Exhibit 3.1 presents their distribution by age.[31] Given that the draft ended in 1973, and assuming entry into the military at age 19, the last draftee would be age 63. Thus, almost every veteran in the prime workforce years (ages 18 to 59) volunteered for military service. The oldest cohorts are overwhelmingly draftees. Many of them served in the Vietnam War, the Korean War, and—though decreasingly—World War Two.

The large number of draft-era veterans has important implications for a study of workforce services for veterans. On average, veterans are much older than the general adult population, with nearly half being age 65 or above. Because labor force participation declines rapidly after age 60, a study of veterans in the workforce is a study of a much smaller and much younger population (see Exhibit 3.1 and Exhibit 3.2).

As a result, even though nearly half of all veterans are age 65 and older, less than a fifth of veterans in the labor force are in that age range.[32] Furthermore, though there are more than 20 million veterans, there are

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[29]   Officers, who make up about 16 percent of the active duty forces, serve longer on average.

[30]   Computed from CNA (2016), Table D.32, "Total DoD, All Active Forces."

[31]   https://www.va.gov/vetdata/docs/Demographics/New_Vetpop_Model/1L_VetPop2016_National.xlsx

[32]   Considering all workers (not only veterans): For individuals born between 1943 and 1953, the full retirement age is 66. Around this age, actual male labor force participation rates are dropping rapidly with age: 77.4 percent for 55- to 59-year-olds; 69.8 percent for 60- to 61-year-olds; 56.1 percent for 62- to 64-year-olds; 36.9

only slightly more than 10 million veterans in the labor force. Very roughly, 10 percent of households have a veteran, but only 5 percent of households have a veteran in the workforce. This difference affects cost assumptions and decisions regarding strategies to identify study samples (see Section 10.2).

Exhibit 3.1. Age Distribution of Veterans, Overall and among the Labor Force (2016)
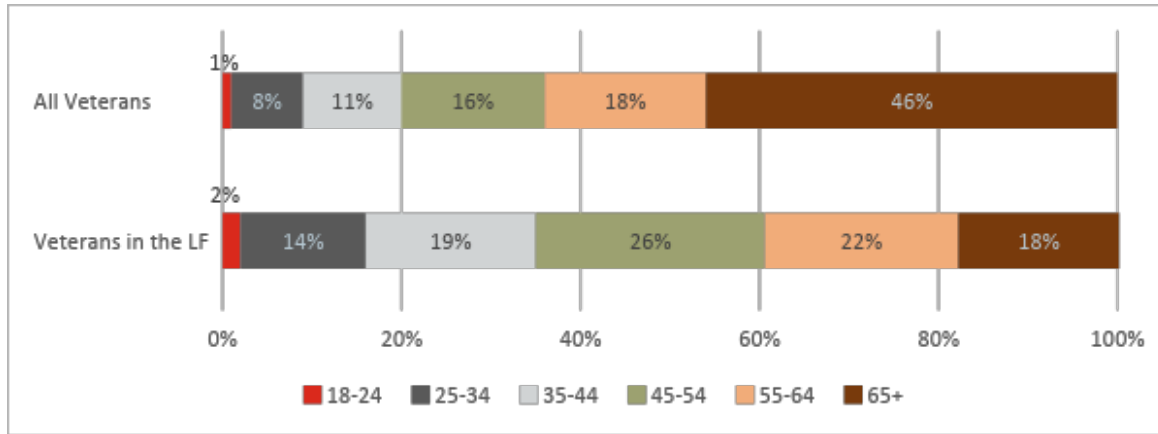
Source: Bureau of Labor Statistics (2017a).
Note that percentages may not sum 100% due to rounding.

Exhibit 3.2. Labor Force Participation Rate of Veterans, by Age (2016)
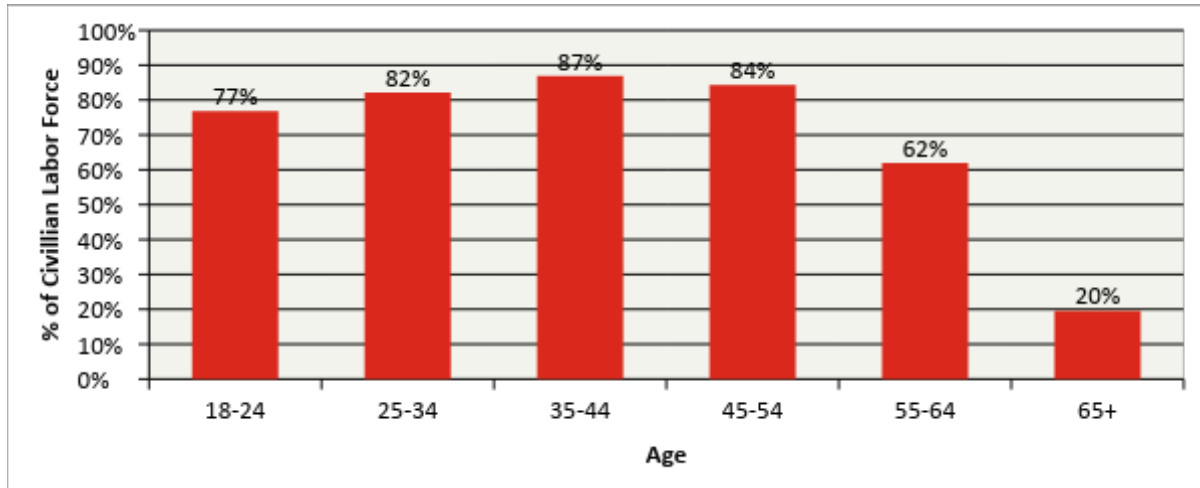
Source: Bureau of Labor Statistics (2017a); based on pooled monthly 2016 CPS surveys.
Note: CPS surveys only non-institutional populations, so these tabulations exclude those in the military on active duty.

Race/Ethnicity. The race/ethnicity composition of veterans varies widely by cohort as a whole, veterans are overwhelmingly White and non-Hispanic (78 percent). Another 11 percent Black and 7 percent are Hispanic. However, these patterns vary by notably generation of veteran, with more recent cohorts having

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    percent for 65- to 69-year-olds; 23.86 percent for 70- to 74-year-olds; and 15.3 percent for 75- to 79-year-olds (figures are for 2016; BLS, 2017b).

higher percentages of veterans from race/ethnic minority groups. For example, an overwhelming 91 percent of World War II era veterans are white—the percentages are 83 percent for Vietnam era veterans and 66 percent for Post-911 veterans. By contrast, the corresponding percent of veterans who are black across those same three cohorts are 4 percent, 9 percent, and 15 percent. Hispanics veterans' prevalence rates rise from 2 percent in the World War II cohort, to 5 percent and 12 percent in the Vietnam and Post-911 cohorts, respectively.

Veterans are not equally distributed across states (see Exhibit 3.3). Although California, Florida, and Texas have the largest veteran populations, they do not necessarily have high concentrations of veterans per capita. Alaska, Maine, Montana, Virginia, and Wyoming have the largest per capita concentrations (National Center for Veterans Analysis and Statistics, 2017).

Exhibit 3.3. Distribution of Veterans by State (2015)

State	State Residents (in ,000s)	Veterans (in ,000s)	State Residents as % of Nation	Veterans as % of Nation	Veterans as % of State
Alabama	3,301	401	1.48%	1.92%	12.15%
Alaska	455	72	0.20%	0.34%	15.82%
Arizona	4,655	511	2.08%	2.45%	10.98%
Arkansas	1,998	235	0.89%	1.12%	11.76%
California	27,874	1,839	12.46%	8.80%	6.60%
Colorado	3,813	390	1.70%	1.87%	10.23%
Connecticut	2,548	204	1.14%	0.98%	8.01%
Delaware	660	75	0.30%	0.36%	11.36%
District of Columbia	518	32	0.23%	0.15%	6.18%
Florida	14,427	1,652	6.45%	7.91%	11.45%
Georgia	6,910	723	3.09%	3.46%	10.46%
Hawaii	960	110	0.43%	0.53%	11.46%
Idaho	1,099	120	0.49%	0.57%	10.92%
Illinois	9,007	665	4.03%	3.18%	7.38%
Indiana	4,521	467	2.02%	2.23%	10.33%
Iowa	2,148	228	0.96%	1.09%	10.61%
Kansas	1,994	175	0.89%	0.84%	8.78%
Kentucky	3,056	278	1.37%	1.33%	9.10%
Louisiana	3,152	321	1.41%	1.54%	10.18%
Maine	939	127	0.42%	0.61%	13.53%
Maryland	4,134	457	1.85%	2.19%	11.05%
Massachusetts	4,985	372	2.23%	1.78%	7.46%
Michigan	7,069	558	3.16%	2.67%	7.89%
Minnesota	3,789	351	1.69%	1.68%	9.26%
Mississippi	1,991	207	0.89%	0.99%	10.40%
Missouri	4,150	455	1.86%	2.18%	10.96%
Montana	694	105	0.31%	0.50%	15.13%

State	State Residents (in ,000s)	Veterans (in ,000s)	State Residents as % of Nation	Veterans as % of Nation	Veterans as % of State
Nebraska	1,271	128	0.57%	0.61%	10.07%
Nevada	1,981	243	0.89%	1.16%	12.27%
New Hampshire	937	115	0.42%	0.55%	12.27%
New Jersey	6,493	369	2.90%	1.77%	5.68%
New Mexico	1,382	172	0.62%	0.82%	12.45%
New York	14,526	798	6.49%	3.82%	5.49%
North Carolina	6,909	729	3.09%	3.49%	10.55%
North Dakota	528	52	0.24%	0.25%	9.85%
Ohio	8,013	823	3.58%	3.94%	10.27%
Oklahoma	2,593	316	1.16%	1.51%	12.19%
Oregon	2841	323	1.27%	1.55%	11.37%
Pennsylvania	9043	876	4.04%	4.19%	9.69%
Rhode Island	765	66	0.34%	0.32%	8.63%
South Carolina	3,358	403	1.50%	1.93%	12.00%
South Dakota	557	77	0.25%	0.37%	13.82%
Tennessee	4,567	506	2.04%	2.42%	11.08%
Texas	18,429	1,698	8.24%	8.13%	9.21%
Utah	1,934	158	0.86%	0.76%	8.17%
Vermont	451	46	0.20%	0.22%	10.20%
Virginia	5,585	782	2.50%	3.74%	14.00%
Washington	4,987	513	2.23%	2.46%	10.29%
West Virginia	1,281	153	0.57%	0.73%	11.94%
Wisconsin	4,033	369	1.80%	1.77%	9.15%
Wyoming	386	51	0.17%	0.24%	13.21%

Note: Population counts are in thousands.

Source: https://www.census.gov/topics/population/veterans/about/veterans-day.html

Though not displayed above, we also note that veterans are concentrated geographically <u>within</u> states, often in areas near military bases. This uneven distribution of veterans both across and within states has important implications for addressed-based sampling. Rather than using a simple random sample of the nation, it would be more efficient to over-sample veterans in areas with high proportions of veterans. We develop these ideas further in Section 6.2.1.

3.2   Labor Market Experiences of Veterans

A key aim of this study is to examine the labor market experiences of veterans particularly in the context of their use of the public workforce system administered through the Department of Labor. To provide a contextual backdrop, we begin in Section 3.2.1 with a discussion of veterans' unemployment rates, followed in Section 3.2.2 with a review of their earnings profile.

3.2.1   Veterans' Unemployment

The U.S. Bureau of Labor Statistics (BLS) reports annually on veterans' unemployment rates, using data from the Current Population Survey. The CPS is a monthly survey of about 60,000 households in the United States. See Section 5.3 for more on the Current Population Survey. The discussion here is based on the 2016 report (BLS, 2017a).

Exhibit 3.4 presents unemployment rates for veterans and non-veterans for 2016, both overall and by age group. Unemployment rates overall are slightly lower for veterans than for non-veterans (4.3 percent vs. 4.7 percent), but differences vary notably across age groups. Among individuals in ages 25 to 34 range, unemployment rates are moderately higher for veterans (6.3 percent vs. 5.0 percent). Among older cohorts, the gap reverses or shrinks.

Exhibit 3.4. Unemployment Rates by Age and Veteran Status (2016)
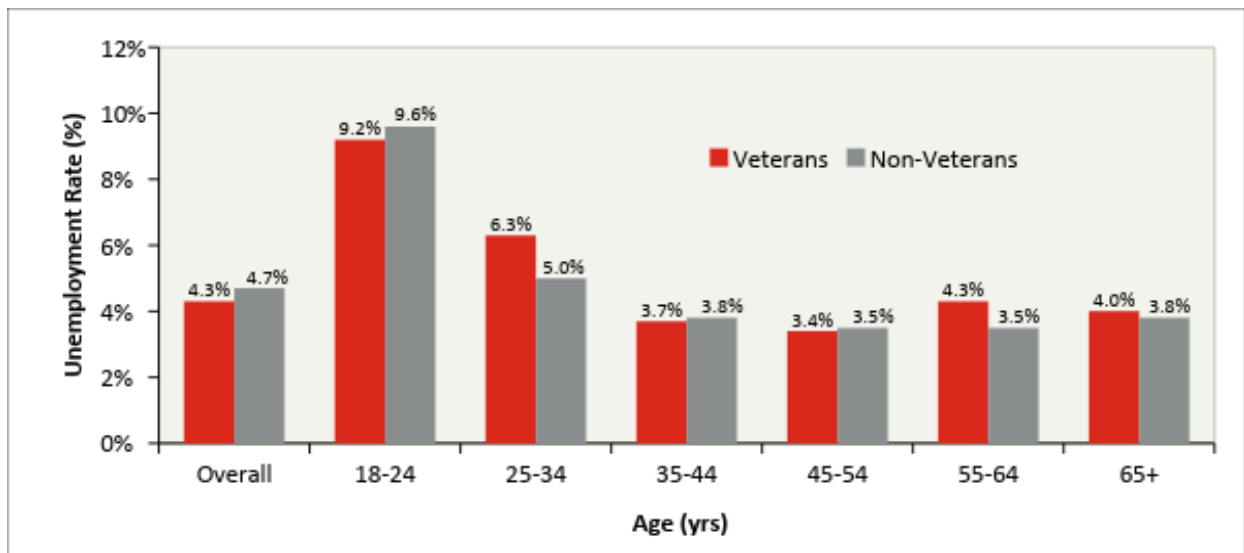
Source: Bureau of Labor Statistics (2017a).

In some earlier years, that veteran/non-veteran gap in unemployment rate has been much larger, generating some policy concern over the comparatively poor labor market outcomes of younger veterans (see Savych, Klerman, & Loughran, 2008, especially footnote 2; Loughran, 2014, especially Chapter 2). However, there are several reasons that the gaps (and changes in gaps) observed in the data do not provide a fully accurate picture of how veteran status affects the labor force prospects of younger veterans.[33] Some are data artifacts and others are other differences between veterans and non-veterans.

- *The annual CPS samples of veterans in general and of young veterans in particular are small.* As a result, the CPS-based estimates have considerable sampling variability. They jump from year to year and do not align well with the later-released but larger-sample ACS results. (See Congressional Budget Office [2017] and Loughran [2016] for similar arguments.)

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[33]   The discussion here draws on Savych et al. (2008), Heaton and Krull (2012), Loughran (2014), and Congressional Budget Office (2017).

- *The unemployment rate is a poor measure of labor market success.* What matters to individuals is not just whether they are employed but also whether they are able to meet their economic needs. As such, earnings are generally considered a stronger indicator and remain the more conventional measure. See Section 3.2.2 for earnings comparisons.

- *Younger veterans have only recently exited from the military.* Entry into the civilian labor market is challenging for both veterans and non-veterans (Topel & Ward, 1992; Klerman & Karoly, 1994; Neumark, 2002). That civilian labor market entry occurs later for veterans than for non-veterans. That is, for many veterans, (re)entry occurs well after exit from the military—once they go to and exit school, as paid for by the GI Bill (Black, Hasan, Krishnamurty, & Lane, 2008). Consistent with this interpretation, using panel data from the National Longitudinal Survey of Youth 1997 (NLSY79), Black et al. (2008) find high rates of unemployment immediately after leaving the military, which rapidly decline thereafter.[34]

- *Veterans are different from non-veterans.* The military only rarely accepts those applicants with the weakest backgrounds (i.e., those who did not graduate high school and those with low test scores). This perspective suggests that we should expect veterans—in the intermediate term—to do better than non-veterans in the labor market (Angrist, 1990, 1998; Loughran, Martorell, Miler, & Klerman, 2011; Loughran, 2014). Conversely, those applicants with the highest test scores often go directly to college rather than into the military. Enlistment rates among college graduates—mostly as officers—are much lower than among those with lower educational attainment. This perspective suggests that we should expect veterans to achieve less favorable outcomes than non-veterans. If we are looking for a true measure of the causal impact of military service, we would need more sophisticated methods; for example, starting by aligning on test scores and educational attainment. (See Congressional Budget Office [2017] for a similar critique and a start at aligning the two populations.) Consistent with this critique, Loughran (2014) compares "like to like"—that is, veterans to non-veterans who are male, citizens, with a high school diploma or GED—which eliminates most of the veteran/non-veteran gap.

- The Transition Assistance Program that helps veterans with the transition to the civilian labor market has been substantially revamped, as is discussed in Section 4.2. However, these statistics still include many veterans who exited the military under the old—or no—TAP design. This may have changed how successfully veterans transition to the civilian labor market.

Indeed, the Congressional Budget Office (2017) notes that even among the youngest veterans, for whom there were large veteran/non-veteran gaps in the employment rate in 2008 and 2009, the gaps have shrunk considerably, almost disappearing.

3.2.2   Veterans' Earnings

There is a large literature on the causal impact of military service on earnings; that is, earnings for veterans relative to non-veterans, aligning the individuals on all pre-service characteristics (i.e., holding all else equal). Overall, that literature appears to show that veterans earn substantially more while in the service, and about the same once they leave. More recent studies provide some evidence that veterans begin to earn more than non-veterans, but not until many years (a decade or more) after leaving the military.

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[34]   Loughran (2014) found similar declines using analysis of matched CPS data.

The discussion here focuses on the effects of voluntary military service.[35] In reviewing the literature, we give careful consideration to the methods used to estimate causal impact. Leamer (1983) strongly critiqued the current econometric methods—involving controlling for a small number of easily observed characteristics—for addressing such questions. Partially in response, over the last quarter century or so, approaches to addressing such causal (holding all else equal) questions have shifted radically. Generically, those changes in acceptable methods are known as the "credibility revolution" (Angrist & Pischke, 2010; see also Angrist & Krueger, 1999). Analyses of the causal effect of military service on earnings have been leading worked examples in those developments in methods for estimating causal impact.

Pre-credibility revolution analyses (in spirit, if not chronologically) use regression or matching to "control" for easily observable factors (e.g., gender, race/ethnicity, age, education). *Post-credibility analyses* accept that such easily observable factors are not sufficient to "hold all else equal." Instead, some more deliberate methods are needed. Sometimes these methods involve choosing a particularly appropriate comparison group; sometimes the more deliberate methods involve choosing a data set with particularly rich individual characteristics; still other times they entail exploiting a natural experiment— some change in policy (Meyer, 1995; Rosenzweig & Wolpin, 2000; Angrist & Krueger, 2001; Dunning, 2012). Particularly thorough studies have involved combinations of these strategies. These studies arguably get closer to estimated causal impact.

In studies of the effect of voluntary service on earnings, pre-credibility revolution analyses use regression on easily observable characteristics (e.g., Philips, Andrisani, Daymont, & Gilroy, 1992; Mangum & Ball, 1989; Bryant, Samaranayake, & Wilhite, 1993).[36] Perhaps surprisingly given that military service was a

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[35] We are now nearly a half century since the end of draft. Almost all drafted veterans have already left the military or will do so soon. Furthermore, there is strong reason to expect that the effect of military service should vary when service is involuntary (i.e., under a draft; in the United States, enlistments pre early-1973) versus when service is voluntary (in the United States, post early-1973). The economic theory of revealed preference (Samuelson, 1938, 1948) implies that individuals who voluntarily join the military must have perceived that it was better to do so than the alternative. In contrast, under a draft, many people who perceive that not enlisting was better would nevertheless be forced to serve. Differential earnings are not the only reason to serve or not serve, but the revealed preference argument implies that we would expect the effect of military service on earnings to differ sharply across the draft/all-volunteer force.

[36] Key *pre-credibility revolution* analyses of the effect of military service in the presence of a draft include Vilemez and Kasarda (1976), Martindale and Poston (1979), Little and Fredland (1979), Fredland and Little (1980), Card (1983), Rosen and Taubman (1982), Teachman and Call (1996), Berger and Hirsch (1983, 1985), Schwartz (1986), Goldberg and Warner (1987), Xie (1992), Philips et al. (1992), Sampson and Laub (1996), Hirsch and Mehay (2003), and Teachman (2004). (Some of these papers are chronologically after the credibility revolution, but use pre-credibility revolution methods. See Brown and Routon (2016, especially Table 2) for more discussion of these papers.) These papers use regression on easily observed characteristics and usually conclude that being drafted for WWII raised lifetime earnings, whereas being drafted for Vietnam lowered lifetime earnings. There is also consistent evidence that the effect of military service on lifetime earnings is more positive for individuals from minority groups (in this period, mostly Blacks).

The credibility revolution critique suggests that such regression methods are unlikely to estimate true causal impact. In particular, those not drafted for WWII were likely to have characteristics associated with challenges in working (e.g., disabilities), such that we would expect them to have lower earnings even if they had been drafted. In contrast, exemptions from the Vietnam draft (e.g., for college attendance) might have implied that the more able were less likely to be drafted and thus would have had higher earnings even if they had been drafted.

choice, these papers also show that—at least for Whites—military service lowers lifetime earnings. The credibility revolution critique suggests that such regression methods are unlikely to estimate causal impact.

In a foundational paper for the broader post-credibility revolution literature (broader in not merely on the effect of military service on earnings), Angrist (1998) presents two analyses of the effect of voluntary military service on earnings.[37] The first analysis in the paper exploits the natural experiment induced by an error in norming the Armed Forces Qualification Test (AFQT).[38] The other uses a comparison group drawn from applicants for military service and the rich information on individual characteristics in their applications—including results of the AFQT and the physical. Angrist argues that the individual characteristics are very rich—including nearly all that the military sees when it makes the decision to offer enlistment. Given the richness of the individual characteristics, Angrist argues that comparison of those who enlist to those who do not —controlling for the observed individual characteristics—is sufficient to estimate causal impact. Given that strong assumption, he finds that for Whites, earnings are higher while in the military, but moderately lower thereafter. For Blacks, earnings are higher both during time in the military and after return to civilian life.

Two RAND studies follow and update Angrist's basic approach—comparing veterans to applicants, controlling for the rich set of characteristics in their applications for military service, as well as their history of pre-application earnings (Loughran et al., 2011; Martorell, Miller, Daugherty, & Borgschulte, 2013).[39] Of them, Loughran and colleagues (2011) extend Angrist's approach to later cohorts (enlistments

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[37] Angrist is also the key author of post-credibility revolution papers on the effects of military service in the draft era. In a series of papers, he exploits the natural experiment provided by the draft lottery to estimate *post-credibility revolution* estimates of military service. Key papers include Angrist and Krueger (1994) on WWII veterans and Angrist (1990) and Angrist, Chen, and Song (2011) for a longer term follow-up. See also Angrist (1991) and Angrist and Chen (2011) for related studies.

[38] On the AFQT misnorming, see Laurence (1989). In brief, there was an error in how AFQT scores were equated to percentiles of the aptitude distribution. The net effect of the error was to bring into the military a large number of people who—in the absence of the error—would have been ineligible to enlist.

[39] There continue to be papers analyzing the causal impact of military service using weak controls. Such papers include Teachman and Tedrow (2007; using NLSY79 data, fixed effects regression, but only basic demographics and AFQT score); Brown and Routon (2016; using NLSY79 and NLSY97 data, linear, quantile, and fixed effects regression, but controlling only for basic demographics and AFQT score); Routon (2014; using NLSY97 data and regression, propensity score matching, and sibling fixed effects); Philips et al. (1992; using Heckman sample selection correction methods); and Bryant et al. (1993; using Heckman sample selection methods). Such studies do not meet the standards of the credibility revolution. We do not discuss them further.

Note that the NLSY79 is a panel of a cohort of individuals aged 14-22 in 1979. It captures individuals who served in the military relatively early in the all-volunteer force era. It mostly captures those on active duty in the 1980s to mid-1990s and most often entering the civilian labor market by the mid-to-late 1990s. The civilian labor market has evolved over the subsequent two decades as have military enlistment standards—and thus the "quality" of veterans relative to non-veterans.

Finally, we make three methods notes:

- Fixed effects sometimes satisfy the credibility revolution critique (Allison 1994). This is because they use each individual as his/her own control, and thus control for all time-invariant characteristics. However, this will only be true when the pre-intervention outcomes are a good reflection of what post-intervention outcomes would be in the absence of the intervention. For military enlistment, it does not seem plausible

1989-2003), longer follow-up of all cohorts (earnings 1994-2007), and a conceptualization of military pay that includes military allowances and bonuses. They estimate overall positive effects on earnings at all durations since enlistment, with the percentage impact being largest shortly after enlistment (when most individuals are still in the military), for minorities (Blacks and Hispanics relative to Whites), and for those with the lowest AFQT scores. The authors note that the decline in earnings in the intermediate term appears to be due partially to college attendance among veterans using their GI Bill benefits—which initially decreases earnings. The earnings impact rises as veterans leave college for full-time civilian employment.

Finally, the authors interpret the available evidence as implying that much of the increased earnings are due to individuals still in the military; impacts on civilian earnings appear to be much smaller, though probably still positive. Follow-on analyses in Martorell et al. (2013) provide additional support for the conjecture that positive returns are primarily due to those individuals still in the military; civilian earnings are similar between veterans and non-veterans. Returns are very large while in the military—40 percent or more. For those who complete their first enlistment, returns are nearly uniformly positive. Returns dip sharply on exit from the military, and then rise slowly but steadily with time since exit from the military. Even after leaving military service, returns appear to be larger for those who served longer. Sixteen (16) years after enlistment (the longest follow-up reported), returns are about 20 percent for those who served 4 years, and about 30 percent for those who served 8 or more years. Finally, returns are increasing faster for those who served longer, suggesting that the returns to longer service will continue to grow at later follow-up.

that pre-enlistment earnings—often part-time, often while in school, rarely "career related"—are a good proxy for long-run earnings potential.

- Siblings fixed effects are never a perfect control for unobservables. They control only for common sibling characteristics. Intra-sibling variation in "ability" is non-trivial. As important is that the NLSY97 sample size of siblings is painfully small. There are only 216 veterans with a sibling in the NLSY97 data. Significant effects are often found for minorities, but there are only 100 veterans with a sibling in the NLSY97 data.
- See Stolzenberg and Relles (1990) for a critique of sample selection methods. Absent a compelling exclusion restriction, such methods are implausible (see Olsen [1980], for a formal argument). Such compelling exclusion restrictions are rare.

4. Workforce Programs that Serve Veterans

In appreciation of their time in the military, the United States provides special services to veterans. These services include a range of employment, training, and supportive services made available primarily through American Job Centers that operate with JVSG, Wagner-Peyser, and WIOA funding. Apart from DOL-funded services, DoD, the VA, and other agencies also operate programs aimed at easing the transition from military service to the civilian labor market and at improving veterans' short- and long-term educational and employment outcomes.

The legislative history and DOL's solicitation suggest that the focus of this study is to be on career readiness, training, counseling, and transitional services provided for veterans through DOL's workforce system. As such, a clear understanding of that system is crucial for this design effort. This chapter provides that background.

The statute identifies those receiving "intensive services" and non-intensive services. We will argue in Section 4.3 that in the current environment, "intensive" services should be interpreted as individualized career services (ICS).[40] ICS are provided both by the DOL/VETS-run JVSG program and by the broader (not veterans-specific) DOL-funded workforce programs, mostly through WIOA and the Wagner-Peyser Employment Service (ES) (see Section 4.3).[41] Veterans also have access to services through DoD and the VA that aim to improve their workforce outcomes. Although the research questions included in the solicitation for this design contract do not include examining DoD or VA services, we describe those services in this chapter since they are a contextual factor relevant to veterans' employment outcomes.

The balance of the chapter proceeds as follows. Section 4.1 discusses exit procedures and data collected from veterans at the time of separation from the armed services. Section 4.2 discusses the Transitional Assistance Program, provided to service members while still in the military to ease the transition to the civilian labor market. Section 4.3 provides an overview of DOL services to veterans through the AJC system, Section 4.4 describes veterans-specific workforce services funded by DOL/VETS, and Section 4.5 focuses in the services available to veterans through DOL's (not veterans-specific) Wagner-Peyser ES and WIOA programs and, in particular, priority of service for veterans in those programs. Section 4.6 uses DOL/VETS-provided statistics to estimate how many veterans are served by the DOL's workforce system. Section 4.7 provides a brief review of the literature on the impact of the workforce system on veterans' earnings and other labor market outcomes. Finally, Section 4.8 discusses the Post-9/11 GI Bill.

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[40] Training supported through DOL's workforce system is received together with intensive services through ongoing case management from AJC counselors. Thus, although training itself is neither an "intensive" or "non-intensive" service, veterans who receive training services through an AJC would be in the "intensive services" group when considering the three groups of veterans to be examined by the study.

[41] Rep. Cook's comments (quoted in Section 2.1) indicate that the study will focus on services provided through the JVSG program: "The study will focus on veterans who have received intensive services from two programs under VETS, … the Disabled Veterans Outreach Program and the Local Veterans Employment Representatives, LVER." Under the current contract the Abt team has been tasked with developing study options that include ICS provided to veterans in AJCs through other programs as well.

4.1   Exiting the Military

According to the VA's definition,[42] a serviceperson becomes a veteran upon leaving the Active Component under conditions other than dishonorable. This status does not depend on enlistment in the reserves or any remaining military service obligation.[43] Alternatively, a reservist becomes a veteran after either (1) deployment on active duty for at least 180 days or (2) service for 20 years.[44]

In preparation for separation from the military, staff complete DD Form 2648—a pre-separation counseling checklist—on behalf of the departing service member (a copy of the form is in Appendix B). The form captures a range of information on the individual's background and service history, along with pre-separation services requested and received. Those services include pre-separation counseling, completion of the DOL Employment Workshop, and an evaluation of transferability of military skills to the civilian workforce.

The service member's official exit and exit status is recorded on DD Form 214—"Certificate of Release or Discharge from Active Duty" (Appendix B). This form verifies a veteran's discharge status. Veterans present it to verify their eligibility for VA benefits. The form contains information filled out by the exiting service member, combined with official information from administrative data. Fields on the form capture various details regarding the individual's active duty service (e.g., time served, rank, last duty assignment) and separation type, along with personal identifiers (name, Social Security Number, date of birth) and post-separation mailing address. Multiple copies of the form are created—for the service branch's personnel file, for the service member, for the VA and DOL, and for the state's veterans affairs agency.

Databases of information from either of those forms would be highly valuable in helping a study find veterans. In an effort to help DOL/VETS notify veterans of the workforce services available to them, DoD began transmitting DD 2648 information for newly separating veterans to DOL on a daily (or nearly daily) basis in November 2016. Through this agreement between the two agencies—the Veterans' Data Exchange Initiative (VDEI)—DOL receives records for roughly 200,000 service members per year. DOL uses the email addresses provided in VDEI to send service members details of the workforce services available in the locality where they expect to live.[45]

For the purposes of this study, note that VDEI data contain:

- Key identifiers: name, Social Security Number (SSN), date of birth.

- Key information about service career: branch of service, dates of service, type of discharge.

- Multiple pieces of tracking information—address at time of entry (often parent's address), last address in the service, projected post-service address, address of a close relative, and email address.

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[42]   38 U.S. Code § 101. See https://www.law.cornell.edu/uscode/text/38/101.

[43]   On military service obligation, see
http://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/130425p.pdf.

[44]   See https://www.army.mil/article/180159/guard_and_reserve_members_receive_veteran_status.

[45]   Details on VDEI were provided in an email communication from Luke Murren of DOL/VETS to Jacob Klerman of the Abt team on 1/16/2018. Mr. Murren estimates that 96 percent of the email addresses provided are valid.

- Other background relevant to employment outcomes: level of education, marital status, number of dependents under 18, ASVAB/AFQT score.

In considering various study design options, it bears noting that the VDEI Memorandum of Agreement explicitly prohibits DOL from viewing or using service members' SSNs contained in the VDEI data. In Chapter 7 we discuss further the potential usefulness of VDEI data for the study, and how the stipulations of that agreement affect it.

4.2   Transition Assistance Program

As they exit from the military, soon-to-be veterans have access to DoD's Transition Assistance Program (TAP), which aims to help both service members and their spouses more smoothly enter civilian life. TAP is authorized under 10 USC 1144 and is a cooperative effort among VETS, the DoD, the U.S. Department of Education, the U.S. Department of Homeland Security, the VA, the Small Business Administration, and the Office of Personnel Management (OPM).

As a component of TAP, VETS administers the DOL Employment Workshop domestically, at overseas installations, and virtually, providing job preparation and employment services to transitioning service members preparing to enter the civilian workforce. The DOL Employment Workshop is standardized so that all attending service members and their spouses receive the same level of instruction. The course consists of 3 days of classroom instruction focused on four core competencies: (1) developing and executing a job search plan; (2) planning for success in a civilian work environment; (3) creating resumes, cover letters, and other self-marketing materials; and (4) engaging in successful interviews and networking conversations. As described in the DOL VETS *Annual Report to Congress, Fiscal Year 2016*:

> *In fiscal year (FY) 2016, VETS completed the implementation of the revised DOL Employment Workshop curriculum begun in FY 2015. This revision incorporated extensive input from TAP stakeholders, including military transition services personnel, transitioning service members, private-sector employers, and Veterans Service Organizations.[46]*

Some data are available on participation levels in TAP Employment Workshops and attendee satisfaction, but there are few rigorous studies of TAP impacts on participant employment outcomes. No studies exist covering the period since the 2015 revisions.

VETS reports that 5,685 domestic DOL TAP Employment Workshops were held in FY 2016, which were attended by 169,464 separating service members. Another 628 overseas workshops conducted in FY 2016 were attended by 14,576 separating service members. According to the U.S. Government Accountability Office (GAO), in FY 2016, 85 percent of separating active duty service members are documented to have completed TAP's required courses (GAO 2017).[47] In FY 2016, VETS collected and analyzed survey results regarding participants' satisfaction with the TAP curriculum and delivery methods: 96 percent reported that they would use what they learned in their own transition planning, and 94 percent reported that the DOL Employment Workshop enhanced their confidence in transition planning. DOL VETS

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[46]   https://www.dol.gov/vets/media/VETS_FY16_Annual_Report_to_Congress.pdf.

[47]   Note that GAO's estimate is lower than the estimate published by VETS, for reasons explained in GAO (2017), principally treatment of missing data.

reports that "the data suggest that the DOL Employment Workshop is meeting the expectations of its audience."[48] The effectiveness or impact of TAP on employment outcomes was not determined.

Though TAP offers potentially valuable services to help retiring and separating military personnel make the transition to the civilian labor market and to access workforce services available from AJCs, it is not likely to be a key focus of the proposed evaluation design (versus JVSG, WIOA, and Wagner-Peyser).

4.3   Types of DOL-Funded Services Provided to Veterans in AJCs

DOL designed the American Job Centers (formerly One Stop Career Centers) to be places where workforce services from various funding streams would be brought together in one place. The intention is to more efficiently serve individuals seeking to retain or obtain employment—improving coordination between systems, reducing duplication, and facilitating access for job-seekers. Although services from some programs funded by agencies other than DOL are available at AJCs—such as Supplemental Nutrition Assistance Program (SNAP) Employment and Training, or employment programs for Temporary Assistance for Needy Families (TANF)—most AJC services are provided through DOL-funded programs (Rosenberg et al., 2015).

The large majority of AJC services are provided through (1) the Wagner-Peyser Employment Service, (2) the Jobs for Veterans State Grants program, or (3) the Workforce Innovation and Opportunity Act (WIOA) Title I programs for dislocated workers and low-income adults (DOL/VETS, 2017).[49] Each of these has its own particular emphasis, but they overlap in terms of both the types of services they can provide and the population they are eligible to serve.

For our purposes, it is useful to distinguish three categories of workforce services provided[50]:

- *Basic career services* are universally available and generally include information on job openings, labor market trends, and training or educational options for youth and adults. These services were referred to as "core" services under WIA.[51] Staff-assisted services include outreach, intake, and orientation activities offered by the AJC and initial assessments of customers' skills and needs. Individuals may also access pre-vocational services, such as basic workplace, computer, or literacy training, as well as supportive services and needs-based payments, and coordination of benefits from other programs (such as Adult Basic Education or access to Pell grants). AJCs also have resource rooms that provide customers with self-service computer access to job listings, tools for self-assessment and career exploration, labor market information, as well as self-serve printers, telephone/fax, and other job search resources. If needed, guidance of AJC staff managing the resource room is also available. In the past, these were referred to as "core" services. It is still common

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[48]   Ibid.

[49]   Much smaller numbers are served through the WIOA Youth program, Dislocated Worker Grants, the Senior Community Services Employment Program, the Indian and Native American Program, and the National Farmworker Jobs Program.

[50]   WIOA also distinguishes "Follow-Up" services as its own category. Those services are provided to adult and dislocated worker participants who have been placed in unsubsidized employment to help them stay in the workforce. Because those services are provided only to individuals who have been enrolled and received basic or individualized career services previously—and because service receipt is conditional on a key outcome of interest, employment—is not a relevant category of services for the purposes of the study.

[51]   Any adult aged 18 or older can receive core services without meeting any qualifying characteristics.

parlance in the workforce system and for parsimony we use that term in some of the discussion that follows.

- *Individualized career services* (ICS) typically involve significant staff time. These services are provided to qualified individuals whom staff deem in need of them in order to retain or obtain employment. Services include specialized assessment, counseling to help customers identify occupational interests and skills, research into training options, and development of an Individual Employment Plan—which is necessary for accessing funds for training. What under WIOA are called "individualized career services" were called "intensive services" under WIA. (For parsimony, we continue to use the term *intensive* in much of the discussion that follows.) Receipt of intensive services typically involves ongoing case management to help a customer carry out an Individual Employment Plan.

- *Training services* are provided in a classroom, through some form of technology-based instruction, or on the job through an agreement with an employer to provide on-the-job training for a specific occupation or set of occupations. Pursuant to the WIOA, participants do not need to receive a pre-specified sequence of prior services before receiving training funds. But practically speaking, some level of prior intensive services is required in order to arrange training funds—including assessments and creation of an Individual Employment Plan. While receiving training funds, individuals will also receive ongoing case management requiring significant staff time. Those services received as part of case management are also intensive services.

  Individual Training Accounts (ITAs), funded through the WIOA Adult and Dislocated Worker programs, are the primary source for paying for such training. Training with ITAs can be pursued when the provider is on the state's Eligible Training Provider List. Providers are typically community colleges, career and technical education schools (including proprietary schools), union-based training programs, and sometimes 4-year colleges or universities (particularly for certain health occupations). WIOA also includes mechanisms to fund contracts for training services with individual training providers, cover a portion of wage costs of on-the-job training and incumbent worker training, and subsidize transitional jobs.

Exhibit 4.1 provides an overview of the services provided by each of the three main DOL workforce programs that serve veterans. The next few sections (4.4, 4.5, and 4.6) provide greater detail on how the programs differ in the populations of veterans they serve and the types of services provided.

Exhibit 4.1. Overview of Services Provided by ES, JVSG, and WIOA

Program	Self-Service, Core (Non-Intensive)	Staff-Assisted, Core (Non-Intensive) Only	Intensive	Training
Wagner-Peyser ES	Yes	Yes	Yes (uncommon)	–
JVSG	–	No[a]	Yes	–
WIOA	–	Yes	Yes	Yes

Key: ES/Employment Service. JVSG/Jobs for Veterans State Grants program. WIOA/Workforce Innovation and Opportunity Act (Title I).

[a] DOL guidance states that DVOPs are to serve only individuals in need of intensive services. See VPL No. 03-14 (DOL, 2014b). A DVOP may, however, provide Core services as needed to a veteran to whom they are also providing intensive services. Note, however, that VETS statistics for Program Year 2015 indicate that a minority of veterans served by JVSG do receive *only* Core services (see Exhibit 4.2). It is unclear if that has remained true in more recently, after AJCs have had more time to adjust to the DOL guidance regarding service provision by DVOPs.

4.4   JVSG and Other DOL/VETS Programs

In order to meet the specific employment needs of veterans, DOL makes services available through the Jobs for Veterans State Grants (JVSG) program,[52] in addition to a set of other services.

4.4.1   JVSG

JVSG grants go to state workforce agencies to hire Disabled Veterans' Outreach Program (DVOP) specialists and Local Veterans' Employment Representatives (LVER). Those staff persons are typically veterans themselves.

In FY 2016, the total state grants for DVOP and LVER were approximately $170 million (DOL/VETS, 2017): about two-thirds for DVOP and the other third for LVER. These programs are state operated, with the state hiring DVOPs and LVERs who work in DOL's nationwide network of 2,500 AJCs.[53,54] They are typically supervised by state staff but coordinate with other staff working in their AJC.

A 2014 Veterans Program Letter (VPL) clarified the roles and division of labor between the DVOP and LVER programs.[55] Under the VPL, DVOPs work with veterans with SBEs, providing them intensive services to address those barriers, making them employment ready, then helping place them in jobs. Though SBEs were initially focused on physical and mental disabilities, categories have expanded over time to include being homeless, a recently separated service member who has been unemployed for more than 27 consecutive weeks in the past year, or a recently released ex-offender; lacking a high school diploma or equivalent; being aged 24 or younger; or meeting WIOA's standard for being low income.

Veterans enrolled in JVSG receive case management from a DVOP specialist until they are exited from the program.[56] The DVOP specialist provides a veteran assessment and one-on-one advising to help create an Individual Employment Plan, then works with the veteran to succeed in achieving the plan's goals. This may include working to build basic skills needed for effective job searching, referring to services that help address relevant SBEs, or identifying training opportunities. DVOPs are to attempt to maintain regular contact with each veteran on their caseload. These services are similar to the individualized career services provided by AJC staff serving the general population, but DVOPs have training[57] and experience to serve the particular circumstances of veterans.

As of FY 2016, there were 1,286 DVOPs nationwide (DOL/VETS, 2017). This is roughly one for every two of the nation's 2,500 AJCs. DVOPs might split time across multiple AJCs to help ensure veterans have access to their services.

LVERs engage business and community leaders to identify job prospects for veterans with SBEs and promote hiring of veterans to meet employers' talent needs. As such, LVERs are not to provide services to individual veterans. Outreach activities may include helping employers register and build job orders in

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[52]   For more about the Jobs for Veterans State Grants: http://www.dol.gov/vets/grants/state/jvsg.htm.

[53]   To read the WIA laws and regulations: http://www.doleta.gov/usworkforce/wia/act.cfm.

[54]   For more about the mission of DOL/ETA: http://www.doleta.gov/etainfo/eta_default.cfm.

[55]   To read more about the role and responsibilities of DVOPs and LVERs, refer to VPL No. 03-14 (DOL, 2014b).

[56]   Typically this occurs after an individual has found employment. Claimants who have not needed services for 90 days are automatically exited (a "soft exit").

[57]   Including training through the National Veterans Training Institute (DOL 2018).

state job databases, raising awareness among employers of tax credits and other incentives for hiring veterans, advocating with employers for individual veteran job candidates, coordinating with unions, developing credentialing and licensing opportunities for veterans, and establishing job search groups.

LVERs closely coordinate with DVOPs and other AJC staff to help transition veterans into appropriate employment—exchanging information on job openings and veterans who might be good candidates for those openings.

4.4.2   Other DOL/VETS Initiatives

In addition to the large-scale operations of DVOP and LVER, the DOL funds or has oversight responsibility for several other programs that can support veterans seeking civilian employment, including the Homeless Veterans' Reintegration Program and its homeless veterans Stand Down grants. In addition, DOL/VETS oversees compliance with the Veterans Employment Opportunities Act; and the Vietnam Era Veterans' Readjustment Assistance Act of 1974.[58] Those separating from the military are also eligible for a form of Unemployment Insurance, called Unemployment Compensation for Ex-Servicemembers (UCX). They are also covered by the Uniformed Services Employment and Reemployment Rights Act of 1994 (USERRA), which prohibits discrimination based on past, current, or future military service, also overseen by DOL/VETS.[59]

4.5   Services for Veterans through WIOA and Wagner-Peyser ES

Veterans are also eligible for workforce services through the broader, non-veterans-specific workforce system administered by the DOL/Employment and Training Administration (ETA). These services are authorized by the WIOA. In terms of the number of individuals enrolled, the Wagner-Peyser Employment Service (ES) dwarfs all other programs authorized under WIOA. ES focuses on basic career services, particularly labor exchange services. Though intensive services may sometimes be provided through ES (DOL, 2016). WIOA's Title I Adult, Dislocated Worker, and Youth programs also provide core services, but focus more heavily than ES on individualized career services and training (DOL, 2014b).

The Jobs for Veterans Act (116 Stat 2033) requires DOL to ensure that veterans (and certain spouses of veterans, defined by USC 4215(a)(1)(A-B)) receive "priority of service" in the DOL workforce system delivered at AJCs[60]:

> *In brief, priority of service means that veterans and eligible spouses are given priority over non-covered persons for the receipt of employment, training, and placement services provided under qualified job training program. This means that veteran or an eligible spouse either receives access to a service earlier time than non-covered person, if the resource is limited, the veteran eligible spouse receives access to the services instead of or before the non-covered person.* (DOL, 2014b)

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[58]   See DOL/VETS (2017) for further discussion of these programs.

[59]   See "Unemployment Compensation for Ex-Servicemembers" (https://workforcesecurity.doleta.gov/unemploy/ucx.asp); "USERRA" (https://www.dol.gov/vets/programs/userra/). Additionally, the *Annual Report to Congress* (DOL/VETS, 2017) provided an overview of both.

[60]   Jobs for Veterans Act of 2002 (PL 107-288), https://www.congress.gov/107/plaws/publ288/PLAW-107publ288.pdf.

Despite whatever impact priority of service and JVSG's veterans-specific programs may have on veterans' receipt of workforce services, it does not appear that veterans are more likely than non-veterans to receive employment and training services through DOL. For Washington State, Chrisinger (2017) finds slightly lower levels of receipt among veterans. Nationally and in two states, Rosenberg et al. (2015) find similar results; they also report that WIA staff did not perceive much advantage from priority of service for veterans because there are sufficient resources to provide non-intensive and intensive services to all who need them.[61]

4.6 Interactions and Distinctions between Services Provided and Veterans Served by ES, JVSG, and WIOA

As Exhibit 4.1 and the preceding discussion highlight, there is some significant overlap in the types of services provided by the different funding streams. For example, some types of non-intensive job search assistance that could be provided to an individual enrolled only in ES might also be provided to a WIOA enrollee through that funding stream. Similarly, JVSG and WIOA counselors provide very similar types of intensive services to a veteran. And the same veteran may be—and often is—co-enrolled in multiple programs at the same time. Below we describe briefly what determines which programs a veteran is served by. We discuss both basic eligibility and other factors that may influence enrollment decisions. We discuss the programs in greater detail in Sections 4.4 (JVSG) and 4.5 (WIOA and ES).

Most job-seekers served in AJCs—including veterans—receive only non-intensive services (see Exhibit 4.2). All job-seekers who are legally authorized to work in the United States are eligible for ES-funded services. Typically, after registering at the front desk, the customer will be identified as a veteran and informed of veteran-specific services (DVOP services, priority of service for WIOA-authorized programs, etc.) and, like the general population, offered access to the resource room. An early step for an individual who comes to an AJC searching for a job would be to create a resume in the state's labor exchange system, where they can access the jobs database and be matched to openings. This process also enrolls them in ES (which runs state labor exchanges). Staff assistance is not required for many available services—particularly services accessed via an AJC's computer systems—such as online skills assessments and job postings.

Some veterans, however, require more significant staff assistance to obtain employment. WIOA and JVSG both offer that type of assistance. The WIOA Adult program provides non-intensive services to any job-seekers aged 18 and older[62] and intensive services on a prioritized basis to individuals facing barriers to employment. Statute requires that WIOA services be prioritized to individuals who receive public assistance, are low-income, or have skills deficiencies. States and local WDBs may identify additional barriers as factors for prioritization. Those priorities are implemented in conjunction with priority of service for veterans (DOL 2016). The WIOA Dislocated Worker program serves job-seekers aged 18 and older who have lost a job—or have received notice of a pending layoff—and will have difficulty returning

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[61] For discussions of the implementation of priority of service for veterans, see Boraas, Roemer, and Bodenlos (2013) and Trutko and Barnow (2010).

[62] In rare circumstances, an individual will only be enrolled in WIOA, not ES, in which case non-intensive services are provided only through WIOA. According to tabulations of program data provided by Luke Murren of DOL/VETS (email communication, Jan. 12, 2018), less than 10 percent of WIOA enrollees are not also co-enrolled in ES. Given that the number of individuals enrolled in ES dwarfs the number enrolled in WIOA (see, for example the enrollment counts in Exhibit 4.2), as a proportion of all AJC customers, those enrolled in WIOA, but not ES will be in the low single digits.

to work without assistance. JVSG/DVOP provides employment services only to veterans—and has been instructed to serve only those veterans with a significant barrier to employment (SBE), such as a disability or low education level (DOL, 2014b).[63]

Although JVSG is focused on veterans—and DVOPs are likely to better understand veterans' needs (and are typically veterans themselves)—a veteran could receive services from ES or WIOA staff instead of or in addition to a DVOP for several reasons:

1. The veteran does not have an SBE, but does qualify for the WIOA Dislocated Worker program.

2. The veteran needed or wanted only non-intensive staff-assisted services, whereas DVOPs are instructed to only provide services to veterans who need (and want) intensive services.

3. The veteran requires training services. The veteran may have first been working with a JVSG counselor, who then referred the veteran to a WIOA counselor for training.

4. The AJC served by a veteran does not have a JVSG representative on staff, or it has one only part-time, with hours that do not fit the veteran's schedule.

5. Because of the vagaries of customer flow and staff availability on a given day, the WIOA counselor was more immediately available than the JVSG counselor, and that counselor was able to meet the veteran's needs.

6. The Veteran chose to work with a WIOA counselor.

For any of those reasons, a veteran may be served by ES or WIOA instead of, or in addition to, JVSG. As described in Section 4.5, co-enrollment in WIOA and JVSG has been found to be common. Furthermore, the overwhelming majority of JVSG and WIOA enrollees are also co-enrolled in ES.

4.7   Veterans' Use of DOL Programs

As we discuss in Chapter 5, WIOA data systems are still evolving. Interviews with DOL staff who work with DOL workforce data report that currently there is substantial variation across states in the quality and completeness of the data submitted by different states. Thus, as of the writing of this report, the most current high-quality data is for the end of WIA, program year (PY) 2015 (ending June 30, 2016). Even for that period it is not possible to get a precise count of the number of veterans served by DOL's workforce system because of fragmented reporting between state-run systems, which capture ES and JVSG data, and local workforce area systems, which capture data for the WIOA Title I programs for adults, dislocated workers, and youths. Under WIA, the latter reported to DOL's national Workforce Investment Act Standardized Record Data (WIASRD) system.

The fragmentation between the state and local data systems makes it impossible to obtain precise counts of the number of veterans receiving services, because of program co-enrollment. Because a veteran might be enrolled in programs covered by both data systems, simply summing counts of veterans served across the two systems will lead to overestimates of the total numbers served resulting from double-counting.

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[63]   SBEs include: being a disabled or special disabled veteran, homeless, a recently separated service member who has been unemployed for more than 27 consecutive weeks in the past year, or a recently released ex-offender; lacking a high school diploma or equivalent; or meeting WIOA's standard for being low income.

As a result, estimates of the total number served must, necessarily, involve some educated assumptions regarding the extent of co-enrollment and how services received compare for exiters versus all participants.

Exhibit 4.2 shows counts from available sources of the total number of veterans receiving various levels of services from different funding streams. This both illustrates the prevalence of veterans' usage of different DOL-funded programs and to provides overall counts of veterans served in AJCs. The numbers not in italics are based on counts from published sources or data provided by DOL/VETS. Italicized numbers are estimates produced using assumptions of the amount of co-enrollment across programs, drawing on relevant known rates. The table notes provide the sources and, where relevant, assumptions behind the calculations of each number.

Because, as with job-seekers generally, the large majority of veterans served in AJCs are enrolled in ES, the count of total veterans served is very similar to the count of veterans enrolled in ES. Previous research in the states of Pennsylvania and Texas has found that more than half of veterans served by WIA Adult and Dislocated Worker programs are co-enrolled in JVSG (Rosenberg et al., 2015). Consequently, the total number of veterans receiving intensive services is notably smaller than the sum of intensive services participants across programs.

Exhibit 4.2. Veterans' Participation in DOL/ETA Programs, PY 2015

Program	Total	Intensive Services	Core (Non-Intensive) Services Only
JVSG	170,044[a]	118,015[a]	52,029[h]
ES	858,196[b]	– [i]	– [i]
WIA Adult	78,296[b]	34,905[c]	43,391[h]
WIA Dislocated Worker	38,994[b]	20,638[c]	18,356[h]
JVSG & ES (combined)	871,799[e]	200,859[d]	670,940[h]
WIA Adult & Dislocated Worker (combined)	117,290[f]	55,543[f]	61,747[h]
All Programs (combined)	899,055[h]	223,076[g]	675,979[g]
JVSG Staff Assisted	144,772[a]	118,015	

Key: ES/Employment Service. JVSG/Jobs for Veterans State Grants program. WIA/Workforce Investment Act.

Note: Numbers in italics are produced using assumptions. Other numbers are based on counts. Counts omit veterans participating in a variety of smaller programs, such as WIA Youth, Dislocated Worker Grants, Senior Community Services Employment Program, Indian and Native American Program, and National Farmworker Jobs Program. Apart from the small total numbers (less than 15,000 participants per year, according to DOL/VETS *Annual Report to Congress* [2017]), the large majority are likely co-enrolled in ES or other programs. Consistent with terminology used in PY 2015, we categorize services as "intensive" or "core," rather than "individualized career" or "basic career."

[a] *Source:* VETS 200 (C) DVOP/LVER Quarterly Report. PY 2015. Provided to the study team in Excel format by Luke Murren of DOL VETS.

[b] *Source:* DOL/VETS (2017), Table 12.

[c] *Source:* Tabulations provided by Luke Murren of DOL/VETS by email on Jan. 12, 2018.

[d] *Source:* ETA 9002 B Quarterly Report. PY 2015. Provided to the study team in Excel format by Luke Murren of DOL VETS.

[e] Assumes 92 percent of JVSG participants are co-enrolled in ES. Consistent with ES co-enrollment rates for WIA reported by Luke Murren of DOL/VETS by email on Jan. 12, 2018.

[f] Assumes no co-enrollment between the WIA Adult and WIA Dislocated Worker programs.

[g] Assumes, consistent with the findings of Rosenberg et al. (2015), that 60 percent of veterans receiving intensive services through WIA Adult and Dislocated Worker programs were also co-enrolled in JVSG (and received intensive services from a DVOP or LVER), and that 92 percent of those receiving core services only were co-enrolled in ES or JVSG.

[h] Calculated as sum or difference of the other two counts in the same row.

[i] Omitted. Exact counts are unavailable and are not necessary to obtain estimates of total numbers of veterans served across programs,

[j] *Source:* DOL/VETS (2017), Tables 2 and 12.

Although there is some unavoidable imprecision in those numbers, they should be close enough to provide a reasonable picture of how common the use of AJC services is among veterans. In particular, they are sufficient to highlight the magnitude of the challenge that the study would face if required to find a large sample of veterans who have received services (intensive services in particular) among a general U.S. population of over 200 million adults—an issue discussed in detail in Chapter 9.

Regarding the characteristics of veterans served in AJCs, according to the ETA 9002 B quarterly report for PY 2015,[64] veterans served by the Wagner-Peyser Employment Service[65] are overwhelmingly male (84 percent), nearly half younger than age 45 (45 percent), a quarter are aged 45-54 (26%), and a quarter aged 55 or older (28 percent). A third (32 percent) are disabled, a fifth (18 percent) are special disabled; a fifth (18 percent) are recently separated; a tenth (9 percent) are homeless; and nearly half are post-9/11 veterans (43 percent). Veterans—both users and non-users of workforce services—are also widely disbursed across the nation. However, they are somewhat more heavily concentrated in some states than others. Exhibit 4.3 shows total state population, estimates of the number of veterans receiving intensive services through JVSG or Wagner-Peyser ES and estimates of veterans receiving intensive services as a proportion a state's total population. The prevalence of veterans receiving intensive services is 0.07 percent nationwide, ranging from as high as 0.28 percent in Arkansas, to as low as 0.01 percent in Minnesota, Vermont, and Washington. These proportions will be particularly relevant to the discussion in Chapter 9 of potential approaches to identifying study participants for the three study groups.

Exhibit 4.3. Veterans Receiving Intensive Services at AJCs, by State, PY 2015

State	Veterans Who Received Intensive Services	Total Population	% of Population Who Are Veterans Receiving Intensive Services
Nationwide	223,076	324,513,016	0.07%
AK	1,159	737,979	0.16%
AL	4,338	4,850,858	0.09%
AR	8,304	2,975,626	0.28%
AZ	4,953	6,802,262	0.07%
CA	11,628	39,032,444	0.03%
CO	2,144	5,440,445	0.04%
CT	1,024	3,593,862	0.03%
DC	673	672,736	0.10%
DE	574	944,107	0.06%
FL	10,733	20,268,567	0.05%
GA	6,572	10,199,533	0.06%
HI	743	1,426,320	0.05%
IA	4,182	3,118,473	0.13%

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[64] These unpublished DOL reports were shared by Luke Murren of DOL VETS with the study team. For information on the reports see: https://www.doleta.gov/performance/guidance/wia/et-406-handbook-expiration-022809.pdf.

[65] This covers the large majority of veterans served by the DOL workforce system. ES serves many more veterans than do either JVSG or WIOA. And most veterans served by those smaller two programs are co-enrolled in ES.

State	Veterans Who Received Intensive Services	Total Population	% of Population Who Are Veterans Receiving Intensive Services
ID	1,311	1,649,324	0.08%
IL	4,823	12,862,051	0.04%
IN	2,740	6,610,596	0.04%
KS	2,338	2,905,789	0.08%
KY	4,680	4,422,057	0.11%
LA	2,510	4,671,211	0.05%
MA	7,136	6,794,002	0.11%
MD	2,938	6,000,561	0.05%
ME	1,813	1,327,787	0.14%
MI	1,604	9,918,170	0.02%
MN	622	5,483,238	0.01%
MO	11,839	6,072,640	0.19%
MS	1,205	2,985,297	0.04%
MT	1,335	1,028,317	0.13%
NC	11,226	10,041,769	0.11%
ND	895	754,859	0.12%
NE	1,784	1,893,564	0.09%
NH	809	1,330,134	0.06%
NJ	2,133	8,960,001	0.02%
NM	2,821	2,082,264	0.14%
NV	5,290	2,883,057	0.18%
NY	13,353	19,819,347	0.07%
OH	3,077	11,606,027	0.03%
OK	3,187	3,904,353	0.08%
OR	4,853	4,016,537	0.12%
PA	7,682	12,791,124	0.06%
RI	566	1,055,916	0.05%
SC	5,322	4,892,423	0.11%
SD	1,484	854,036	0.17%
TN	3,858	6,590,726	0.06%
TX	37,728	27,454,880	0.14%
UT	2,083	2,984,917	0.07%
VA	4,000	8,366,767	0.05%
VT	90	624,455	0.01%
WA	701	7,152,818	0.01%
WI	1,512	5,759,744	0.03%
WV	821	1,839,767	0.04%
WY	681	586,102	0.12%

Key: AJC/ American Job Center. PY/program year.

Note: Counts of veterans receiving intensive services in each state are derived by authors' tabulations of the public-use PY 2015 Quarter 4 Wagner-Peyser data files, adjusted to account for veterans served who are not included in those data. The Wagner-Peyser data cover the large majority of veterans who receive intensive services through the DOL workforce system, and they provide detail on the services received through ES or JVSG. But the Wagner-Peyser data do not include individuals who received intensive services through the WIA Adult or Dislocated Worker programs, and *not* through JVSG or Wagner-Peyser. As noted in Exhibit 4.2, more than 10 percent of all veterans who received intensive services received no intensive services from ES or JVSG, and thus are not in the Wagner-Peyser data. The estimates of veterans served in the table are calculated by applying a multiplier (1.1034) to inflate the counts from the Wagner-Peyser data, adjusting for those omitted veterans. The adjustment assumes that the geographic distribution of veterans receiving intensive services through only the WIA Adult or Dislocated Worker programs mirrors the distribution of those receiving intensive services through JVSG or Wagner-Peyser.

4.8   Impact of Workforce Services on Veterans' Outcomes

Three studies in the literature provide comparisons that shed light on outcomes resulting from various levels of assistance from the workforce system generally and veterans-only programs specifically. Exhibit 4.4 highlights pertinent design information from these. Only Barnow and Trutko (2010) use data that are representative of the entire United States. All three studies use non-experimental analysis methods: tabulations, regression analysis, or propensity score matching (PSM).

Exhibit 4.4. Previous Analyses of Service Receipt by Veterans

Setting, Data: Years	Method	Notable Findings
Barnow & Trutko (2010)		
United States WIASRD public use files: 2004-2006	Tabulations, linear regression analysis	• Regression analysis shows veterans are less likely to receive services than non-veterans in both the Adult and Dislocated Worker programs. However, among those who receive intensive services, veterans are more likely than non-veterans to receive training services. • Tabulations suggest that veteran and non-veteran exiters had similar patterns of employment rates, pre- and post-program enrollment. • Tabulations show that veterans earned substantially more than non-veterans, both before entering the program and after exiting.
Rosenberg et al. (2015)		
Pennsylvania and Texas Workforce Investment Streamlined Performance Reporting (WISPR), which links individuals across WIA, ES, JVSG, TAA, and other programs: 2011-2012	Clustered linear regression analysis	• Veterans received more services from DVOP or LVER (67 percent in PA; 59 percent in TX) than intensive services or WIA-funded training. • In PA, veterans had similar employment and earnings outcomes to non-veterans. • In TX, veterans and non-veterans had similar employment outcomes over the 12-month period after program exit. However, veterans had higher earnings than non-veterans during this time.

Setting, Data: Years	Method	Notable Findings
Chrisinger (2017)		
Washington State Wage and employment data from Unemployment Insurance system; program participation data from state workforce caseload management system: 2002-2012	Tabulations for service receipt; propensity score matching for impacts on employment and earnings	• Overall receipt of services similar for veterans and non-veterans. Services to veterans were primarily provided through veterans-specific programs (DVOP, LVER) as opposed to WIA. • Veterans were less likely to be employed within 6-12 months after program exit than non-veterans. • Employed veterans had higher earnings than non-veterans within 6-12 months of program exit, though this finding is less robust than the finding on employment.

Key: ES/Wagner-Peyser-funded Employment Service. JVSG/Jobs for Veterans State Grants program. TAA/Trade Adjustment Assistance program. WIA/Workforce Investment Act. WIASRD/Workforce Investment Act Standardized Record Data. WISPR/Workforce Investment Streamlined Performance Reporting.

Specifically, Barnow and Trutko (2010) report unadjusted tabulations of employment and earnings and regression-adjusted relationships for service receipt that condition on case characteristics, race, and program year. Rosenberg et al. (2015) report regression-adjusted relationships between post-program earnings and a limited set of pre-program employment and earnings information, demographics, and measures of service receipt. Chrisinger (2017) uses a PSM approach to estimate impacts, but the propensity scores are estimated using only demographic characteristics and measures of time.

The findings across the three studies are generally consistent: Veterans are more likely to receive intensive services through a DVOP than any other program,; the difference in post-program employment between veterans and non-veterans is not large; and in certain states (Texas and Washington) employment rates appear to be lower for veterans relative to non-veterans (Rosenberg et al., 2015; Chrisinger, 2017). Additionally, after program exit, veterans generally had higher earnings than non-veterans. It is difficult to discern a systematic relationship between specific services and post-program earnings, but receipt of WIA-funded training is positively correlated with earnings (Rosenberg et al., 2015).

Several additional studies have explored outcomes and impacts of the services provided by the broader DOL workforce system, with a focus on WIOA/WIA-funded services. Most of these studies find positive, but small, impacts for participants (who may or may not be veterans). Non-experimental studies include Heinrich, Mueser, Troske, et al. (2013), Hollenbeck and Huang (2006), Mueser and Stevens (2003), Chrisinger (2013), and Andersson, Holzer, Lane, Rosenblum, & Smith (2013). Using random assignment methods, the *WIA Gold Standard Evaluation* had similar findings (McConnell et al., 2016).[66]

The VETS-specific studies and the non-experimental literature on the impact of WIA are informative about sample sizes required to estimate the causal impact of VETS programs using non-experimental methods. To determine the appropriate size of the sample needed to detect impacts, we consider the plausible impacts of training, intensive services, and non-intensive services. Exhibit 4.5 summarizes reported impacts on quarterly earnings from prior studies of DOL programs, either specific to veterans or for the workforce as a whole. Estimates are also separated by whether they focused on impacts of training specifically or if they focused on receipt of intensive services or more general programming. Across the studies, Exhibit 4.5 reports the states/programs included in the study, as well as the sample size, estimated impact, and standard error/statistical significance.

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[66] Because of priority of service requirements, veterans were excluded from the WIA Gold Standard Evaluation.

The findings in Exhibit 4.5 suggest that plausible impact is proportional to the expense of the services. Training is the most expensive service; we would expect it to have the largest impact. The overall ordering of cost of services is as follows: training, intensive services, and then non-intensive services. We would expect a similar ordering of impacts.

For example, the results of the random assignment *WIA Gold Standard Evaluation* indicate that those in the Adult program eligible for training, intensive, and core services earned $1,269 more across the first five quarters post-random assignment than those who were offered core services only. Those offered core and intensive services (but no training) earned $1,113 more than those who receive core services only (McConnell et al., 2016). Though none of these estimates is statistically significant, they give a sense of the magnitude of impacts we might expect to find for the veteran population.

A formal power analysis for the proposed quasi-experimental design requires several assumptions that the research team is not comfortable making at this stage (e.g., assumed R^2 values reflecting covariates' performance). However, the summary of sample sizes from quasi-experimental evaluations in Exhibit 4.5 provides insight to the statistical power that is necessary to identify impacts for this study (excluding McConnell et al. (2016) because it is a randomized evaluation). In Chapter 2 we quoted DOL's testimony, which implied a sample size of 12,000 veterans. Studies of similar size in Exhibit 4.5 were able to detect impacts in the thousands of dollars per quarter (Andersson et al., 2013; Hollenbeck & Huang, 2016; Rosenberg et al., 2015) but struggled to detect impacts in the hundreds of dollars or smaller (Andersson et al., 2013; Chrisinger, 2013; Rosenberg et al., 2015). Those smaller impacts were detected in studies where the sample was in the hundreds of thousands or millions (Chrisinger, 2017; Heinrich et al., 2013).

The review of plausible impact sizes above suggests that this study's findings across the three utilization groups are unlikely to all be in the thousands of dollars. Instead, it is likely that some of the differences will be in the hundreds of dollars or smaller. Given these smaller plausible impacts, existing literature suggests a need for tens (perhaps hundreds) of thousands of observations to detect likely impacts.

Related literature explores the impact of disability benefits on work and earnings. Ongoing debates about disability policy turn on the extent to which disability benefits lower work effort (vs. simply making payments to those who would not otherwise have worked). Veterans' disability benefits provide a useful test case (Autor & Duggan, 2007). Like non-veteran disability payments, veterans' disability benefits provide additional income; unlike non-veterans disability payments, they do not decrease with labor market earnings. In addition, in the non-veterans disability case, work might cause loss of health insurance, which is tied to the benefit; but in the case of veterans, health insurance continues regardless of work and earnings (Boyle & Lahey, 2010).

Exhibit 4.6 summarizes the results of the literature on the impact of veterans' disability benefits on earnings.[67] The population of veterans is ideal for understanding these issues for several reasons. First, there are excellent records available for the population of veterans (relative to non-veterans). Second, two specific policy changes potentially provide insights: (1) in 1996, there was significant expansion to the VA healthcare system (Boyle & Lahey, 2010); and (2) in 2001, diabetes was added to the list of conditions covered by Disability Compensation (DC) for Vietnam-era veterans who had served "in theatre," a change known as the "Agent Orange decision" (Autor & Duggan, 2007; Autor, Duggan, &

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[67]   On the broader literature, see Autor, Kostøl, and Mogstad (2015) and Autor, Maestas, Mullen, and Strand (2015).

Lyle, 2011; Autor, Duggan, Greenberg, & Lyle, 2016; Duggan, Rosenheck, & Singleton, 2010). A third dimension of interest, though not a policy change, is the growth in diagnoses of post-traumatic stress disorder (PTSD), which is a qualifying condition for DC.

Exhibit 4.5. Estimated Impacts on Quarterly Earnings from Earlier Evaluations of Veterans'/WIA Programs

Study	State(s)	Program(s)	Comparison	N	Earnings	
					Estimate	S.E.
Veterans						
Any services/intensive services						
Chrisinger (2017)	Washington	All	Impact of any WIA services for veterans compared to non-veterans, earnings 6 months after program exit (propensity score weighting)	675,447	$350***	–
Chrisinger (2017)	Washington	All	Impact of any WIA services for veterans compared to non-veterans, earnings 6 months after program exit (propensity score matching)	220,034	$61	–
Rosenberg et al. (2015)	Pennsylvania	All	Impact of intensive services for veterans compared to veterans who do not receive intensive services	17,801	$89	$190
Rosenberg et al. (2015)	Texas	All	Impact of intensive services for veterans compared to veterans who do not receive intensive services	94,108	–$341**	$106
WIA training services						
Rosenberg et al. (2015)	Pennsylvania	All	Impact of WIA training services for veterans compared to veterans who do not receive WIA training services	17,801	$1,696**	$326
Rosenberg et al. (2015)	Texas	All	Impact of WIA training services for veterans compared to veterans who do not receive WIA training services	94,108	$2,350**	$256
General Population						
Any services/intensive services						
Heinrich et al. (2013)	12 states	Adult	Impact of core/intensive services compared to a comparison group of UI claims recipients/ES data (separate estimates for men and women)	3,025,076[a]	$100-$200**	–
Heinrich et al. (2013)	12 states	Dislocated Worker	Impact of core/intensive services compared to a comparison group of UI claims recipients/ES data (separate estimates for men and women)	2,956,821[a]	$200-$300**	–
Hollenbeck & Huang (2016)	Washington	Adult	Impact of WIA compared to individuals who registered for WP services	11,978	$1,481***	–

Study	State(s)	Program(s)	Comparison	N	Earnings	
					Estimate	S.E.
Hollenbeck & Huang (2016)	Washington	Dislocated Worker	Impact of WIA compared to individuals who registered for WP services	13,586	$1,667***	–
Chrisinger (2013)	Washington	Adult	Impact of WIA adult program as compared to people receiving less-intensive Labor Exchange services	15,998	$60	$38
WIA training services						
Heinrich et al. (2013)	12 states	Adult	Impact of WIA training compared to only core/intensive services	2,993,011[a]	$400**	–
Heinrich et al. (2013)	12 states	Dislocated Worker	Impact of WIA training compared to only core/intensive services	2,949,498[a]	< $0[b]	–
Hollenbeck & Huang (2016)	Washington	Adult	Impact of WIA training compared to individuals who registered for ES	1,521	$1,957***	–
Hollenbeck & Huang (2016)	Washington	Dislocated Worker	Impact of WIA training compared to individuals who registered for ES	4,925	$1,410***	–
Andersson et al. (2013)	1 of 2 unnamed states	Adult	Impact of WIA training services as compared to people receiving WIA without training	15,532	$602	$641
Andersson et al. (2013)	1 of 2 unnamed states	Dislocated Worker	Impact of WIA training services as compared to people receiving WIA without training	10,836	–$5,567***	$1,047
Andersson et al. (2013)	2 of 2 unnamed states	Adult	Impact of WIA training services as compared to people receiving WIA without training	23,182	$329	$467
Andersson et al. (2013)	2 of 2 unnamed states	Dislocated Worker	Impact of WIA training services as compared to people receiving WIA without training	28,246	–$5,227***	$653
McConnell et al. (2016)	Nationally representative	Adult	Randomized evaluation of impact of full WIA (including training services) compared to core and intensive services only	1,980	$156	–
McConnell et al. (2016)	Nationally representative	Adult	Randomized evaluation of impact of full WIA (including training services) compared to core services only	1,992	$1,269	–
McConnell et al. (2016)	Nationally representative	Adult	Randomized evaluation of impact of core and intensive services compared to core services only	1,954	$1,113	–
McConnell et al. (2016)	Nationally representative	Dislocated Worker	Randomized evaluation of impact of full WIA (including training services) compared to core and intensive services only	1,412	–$4,235	–

Study	State(s)	Program(s)	Comparison	N	Earnings	
					Estimate	S.E.
McConnell et al. (2016)	Nationally representative	Dislocated Worker	Randomized evaluation of impact of full WIA (including training services) compared to core services only	1,382	-$1,353	–
McConnell et al. (2016)	Nationally representative	Dislocated Worker	Randomized evaluation of impact of core and intensive services compared to core services only	1,390	$2,883	–

Key: ES/Wegner-Peyser Employment Service. UI/Unemployment Insurance. WIA/Workforce Investment Act.

Statistical significance levels: ***$p < .01$, **$p < .05$, *$p < .10$.

[a] Sample estimates represent the entire potential sample prior to many-to-one propensity score matching. Post-match sample sizes are not provided in the paper.

[b] Point estimates for the overall impact of WIA training in the Dislocated Worker program are not reported. The trajectory of impacts over quarters is as follows: earnings are significantly negative for the first 2 years after training and then rise, though they are never statistically different from zero.

Several data sources have been used to address these questions across the literature. The most common data set in the literature is the Current Population Survey (Autor & Duggan, 2007; Boyle & Lahey, 2010; Coile, Duggan, & Guo, 2015; Duggan et al., 2010). This nationally representative survey includes a veterans' supplement that reports demographic and labor force characteristics for veterans aged 17 and older, including those who have a service-connected disability.[68] Studies that use administrative rather than survey data typically combine records from the Defense Manpower Data Center (DMDC), the VA, and the Social Security Administration (SSA) (Autor et al., 2011; Autor et al., 2016).

Exhibit 4.6. Studies of Disability Compensation for Veterans

Study	Data	Summary of Findings
Autor & Duggan (2007)	CPS	Argues that receipt of Disability Compensation represents a pure income effect. Uses the 2001 Agent Orange decision to estimate effect on labor force participation for Vietnam veterans. Finds substantial reductions in labor force participation among Vietnam veterans, but cautions that work is preliminary.
Autor, Duggan, & Lyle (2011)	CPS, Army personnel records	Documents diverging trends in labor force participation and receipt of Disability Compensation for Vietnam veterans and their non-veteran contemporaries. Compares medical conditions of DC recipients, with a focus on PTSD.
Autor, Duggan, Greenberg, & Lyle (2016)	DMDC merged with VA records (to measure DC benefits) and SSA records (to measure earnings, SSI, SSDI)	Compares Vietnam veterans whose eligibility for Disability Compensation changed after the 2001 Agent Orange decision versus Vietnam veterans whose eligibility was unchanged. Finds that receipt of DC benefits reduced labor force participation by 18 percentage points.
Boyle & Lahey (2010)	CPS	Uses a difference-in-differences strategy to compare labor market outcomes for veterans and non-veterans before and after expansion to the VA healthcare system in 1996. Finds that older workers decrease work on both the extensive and intensive margins after gaining access to non-employer-based health insurance.
Coile, Duggan, & Guo (2015)	CPS	Documents large difference in veteran and non-veteran labor force participation/employment rates, as well as large growth in Disability Compensation beneficiaries over time. Argues that trends along these dimensions coincide very closely.
Duggan, Rosenheck, & Singleton (2010)	CPS	Investigates the effect of the Agent Orange decision on enrollment and expenditures in the Disability Compensation program. Finds that enrollment increased by 6 percentage points and many recipients also realized increases to their benefits. This increased annual program expenditures by $2.85 billion.

Key: CPS/Community Population Survey. DC/Disability Compensation. DMDC/Defense Manpower Data Center. PTSD/post-traumatic stress disorder. SSA Social Security Administration. SSDI/Social Security Disability Insurance. SSI/Supplemental Security Income. VA/Veterans Administration.

Generally, these studies find that access to DC and expanded healthcare have large implications for veterans' labor force participation. Several studies note the divergence in labor force trends corresponding

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[68]   See CPS Technical Documentation: https://www.bls.gov/cps/documentation.htm.

with the 2001 Agent Orange decision (Autor & Duggan, 2007; Autor et al., 2011; Coile et al., 2015; Duggan et. al, 2010), and more rigorous work shows that eligibility for DC benefits caused an 18 percentage point reduction in labor force participation for qualifying Vietnam-era veterans (Autor et al., 2016). Expansion of healthcare also caused changes to the composition of the workforce—more educated workers shifted to self-employment, changes that are consistent with these workers being no longer "locked" into their job because of employer-sponsored healthcare (Boyle & Lahey, 2010).

4.9   Post-9/11 GI-Bill

Beyond workforce training programs, DoD and the VA provide other important benefits to veterans that can affect their labor participation rate after leaving military service. Those benefits include the Post-9/11 GI Bill, VA healthcare, a defined benefit pension plan, and involuntary separation pay. This section considers the most relevant benefit for this study, the Post-9/11 GI Bill.

For veterans serving after September 10, 2001, educational benefits are provided under the Post-9/11 Veterans Educational Assistance Act of 2008, as amended by the Harry W. Colmery Veterans Educational Assistance Act of 2017.[69] It grants up to 36 months of education benefits to eligible veterans, including full tuition at the in-state rate and a monthly housing allowance equal to the allowance that would be received by an E-5 (in the Army, a Sergeant) with dependents for the school's location.[70] Education benefits expire 15 years after the veteran's departure from active duty if the veteran left active duty before January 1, 2013; thereafter, the benefit expiration date was removed.[71]

About 790,000 beneficiaries received Post-9/11 GI Bill educational benefits in FY 2016, with approximately 130,000 of those starting their benefits that year. Of those who started receiving benefits in FY 2016, about half were pursuing an undergraduate degree, about a quarter were in college pursuing a non-degree program, and another fifth were at a vocational/technical institution. Consistent with these official statistics, the analysis in Wenger et al. (2017) suggests considerable enrollment in non-degree programs and considerable enrollment at institutions focused on veterans with GI Bill benefits.

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[69]   For further discussion of the use, adequacy, and issues with the Post-9/11 GI Bill, see Steele et al. (2010), Buryk et al. (2015), and Wenger et al. (2017). In particular, Appendix A of Wenger et al. (2017) provides historical detail on the evolution of the GI Bill and forces leading to the 2008 revisions.

[70]   U.S. Department of Veterans Affairs, "Post-9/11 GI Bill" [pamphlet], https://www.benefits.va.gov/gibill/docs/pamphlets/ch33_pamphlet.pdf.

[71]   U.S. Department of Veterans Affairs, "Post-9/11 GI Bill" [website], https://www.benefits.va.gov/gibill/post911_gibill.asp.

5. Extant Data Source Options

This chapter provides background on promising data sources that potentially generate insight into the research questions outlined earlier (see Exhibit 2.1). Section 5.1 summarizes the research challenges that the study's data sources will need to be able to address. The subsequent sections describe extant data sources that could potentially be used to meet those challenges: administrative data sources (Section 5.2) and existing surveys (Section 5.3).

5.1 Overview of Data Requirements

To understand the issues discussed in this chapter, consider Exhibit 5.1, which depicts the database construction task graphically. The rows of the figure correspond to the groups specified by the DOL's RFP and statute.

Exhibit 5.1. The Database Construction Elements

Group	Veterans Status	Utilization of Workforce System	Outcomes
1	Veterans in the workforce[a]	Intensive services	Outcomes for Group 1
2		Only non-intensive services	Outcomes for Group 2
3		None	Outcomes for Group 3
4	Veterans not in the workforce		
5	Non-veterans		

[a] "In the workforce" means working or actively searching for work (per Bureau of Labor Statistics).

Specifically, the DOL's RFP and statute expresses interest in outcomes for the three workforce system utilization groups—(1) veterans using intensive workforce services; (2) veterans using only non-intensive workforce services; and (3) veterans in the workforce but using no workforce services—and no interest in two other groups, (4) veterans not in the workforce and (5) non-veterans.

To support this precise level of targeting, the study must complete three steps:

1. Build a list of veterans in the workforce.

2. Classify those veterans by their use of workforce services.

3. Tabulate outcomes for each group.

The design challenge is how to complete those three steps in a cost-efficient and technically sound manner. Conceptually, each of these steps could be addressed with extant data (administrative or survey) or with a new study-specific survey. When feasible, studies using extant data are preferable. Any new survey effort is likely to have substantial cost, whereas the cost of accessing existing data is likely to be much lower.

When extant data sources include the topics of interest, administrative data are a particularly useful source for several reasons:

- *Sample Size and Representativeness.* . The large number of veterans and even a small cost per case implies that survey samples will include only a small fraction of all veterans (perhaps a few thousand out of more than 10 million veterans in the workforce). Difficulty reaching sampled members and

completing interviews with them implies a concern about non-response bias; that is, that—even after weighting—survey respondents are not representative of the population of interest.

In contrast, for a nearly fixed (i.e., invariant with respect to the number of veterans for whom data are accessed) and relatively low total cost (compared with a survey), administrative data will usually provide information on all veterans in the system. Larger samples enable more precise estimates and the ability to do subgroup analyses, even on smaller subgroups. Furthermore, there is no non-response bias.

- *Data Quality.* Administrative sources are likely to provide higher quality data—for domains covered. They are not perfect, and errors and omissions can occur. But issues tend to be less common than in survey data. For example, it is a felony for an employer to misreport earnings paid for Unemployment Insurance taxes or for an individual to underreport earnings on a tax return.[72] By contrast, survey responses are subject to response error; that is, respondents simply do not remember or might choose not to give the true answer.

  In completing a survey to identify those using workforce services, the respondent faces two challenges. First, the respondent must correctly date any interaction with the workforce system during the prescribed timeframe (likely to be 1 year). The concern is telescoping; that is, that some interaction more than a year earlier will be included, or that some interaction within the year will not be included. Second, even if the timing of the interactions is accurately established, the interactions need to be properly classified. Respondents are unlikely to be able to accurately distinguish intensive from non-intensive workforce services or recall the particular funding stream through which they received services.

- *Frequency and Accuracy of Information.* Administrative data are likely to include more time points. In theory a survey can ask about information from multiple past time points, but recall is sufficiently problematic that questions about earlier outcomes yield poor data. Thus, in practice, a survey only has information as of each interview. In contrast, administrative data sets usually contain information for each point in time or for intervals (calendar quarters or years)—from before the study started and updated throughout the period of the study.

That said, however, extant data—and in particular administrative data—do not cover all outcome domains. Instead, data to answer some research questions might be obtainable only via a survey. Section 6.1 of this chapter inventories to what extent research questions could be addressed with extant data versus a new study-specific survey.

5.2   Administrative Data Sources

This section considers issues related to a study design that would use only administrative data to construct a sampling frame, and perhaps, even for outcomes. Consistent with Exhibit 5.1, a purely extant-data-based study design would proceed as follows:

1. Some extant data system would be used to identify veterans; that is, to provide their SSNs.

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72   The statements in the text refer to salaried earnings. Many such sources exclude self-employment income. In addition, informal employment is often not reported for tax purposes and therefore does not appear in administrative data.

2. Some—likely different—extant data system would be used to classify veterans by their use of the workforce system. The result would be a list of veterans classified by utilization group.

3. This list could then be matched to some other—again, likely different—extant data system containing information on outcomes of interest (e.g., earnings).

4. In later years, match again to data on outcomes, thereby fulfilling the requirement for a "longitudinal" study.

The resulting database would then be used to tabulate outcomes for the three prescribed groups of veterans.

The balance of this section attempts to identify administrative data systems that potentially support each of these steps. Section 5.2.1 discusses DoD data that might provide a list of veterans and their basic demographic characteristics (e.g., date of birth, gender, education at exit from military service). Section 5.2.2 discusses DOL data that might provide information on use of the workforce system. Finally, Section 5.2.3 discusses data that might provide information on outcomes of interest; in particular, earnings.

5.2.1 Department of Defense Data

Several DoD data sets contain information that could be used to help construct a sampling frame or to answer particular research questions. We describe them below. RAND uses these data in its merged analysis file of veterans' labor market experiences (see Section 7.2).

- *Work Experience File (WEX) and Personnel Master Files.* DMDC maintains the Active Duty Military Personnel Master file and Reserve Components Common Personnel Data System file, which contain information on each service member's military career history. From these files, DMDC constructs the WEX, which provides a monthly snapshot of service members' enlistment status, pay grade, unit, component, military occupation, and educational attainment in each month, starting September 30, 1999. The WEX can be used to compute length of service, pay grade/rank, educational attainment, and military occupation at the time of separation (Martorell, Klerman & Loughran, 2008; Charles Goldman's discussions with DMDC).

  A list of veterans is crucial information for constructing the sampling frame required to address DOL's research questions. In principle, *WEX could be used to construct a list of veterans.* It is thus a crucial potential source for a frame. The Defense Enrollment Eligibility Reporting System file, described below, can be linked to the WEX to add background variables that could be used as control variables in a propensity score matching study of the causal impact of workforce services (see Section 8.2).

- *DD Form 214 (Separation) Database.* DMDC maintains a record of each service member's separation from the military, which is provided on paper to each member on Form DD 214. This database records the separation date and a standardized reason-for-separation code, which indicates whether the service member is separating because of normal end-of-service (short of retirement), retirement, service-related or other disability, or discharge for conduct or legal reasons such as drug and alcohol use or criminal conviction (information derived from Charles Goldman's discussions with DMDC).

  This file contains the information on reasons for discharge required by RQ 12.

- *Prior Service Military Address File.* This database contains a list of Individual Ready Reserve (IRR) members across all services and components maintained and distributed jointly by DMDC and DoD's Joint Advertising Market Research & Studies program. For each veteran who left active duty in the last 5 years, this file contains basic demographics and information on service history, separation, and address (as of separation). DMDC used this file as a frame for a 2011 survey of IRR knowledge and attitudes about the reserves (this is the data used by Wiggins, Evans, Luchman, & Gibson [2014]).[73] Two decades ago, Ramsberger, Barnes, & DiFazio (1995) used these data as a frame for their Army Alumni Survey.

  This file contains address information for veterans although it is often outdated.

- *Military Entrance Processing Command (MEPCOM).* The military collects MEPCOM data to screen potential recruits. This information about each applicant includes educational attainment, height and weight (and thus Body Mass Index), results from the physical exam, a background check (to look for contact with the criminal justice system), drug and alcohol tests, and the AFQT percentile score. The AFQT score in particular is a very important measure of cognitive ability and has been shown to be a powerful predictor of labor market earnings (Neal & Johnson, 1996). Other information contained on the application record includes date of application, the service component to which the applicant applied, and basic demographic information (race/ethnicity, gender, and age). The MEPCOM records also include an applicant's home state and county. Officers and officer candidates are not included in this database (Martorell et al., 2013; Loughran et al., 2011). Angrist (1998) used these data in his analyses of the impact of voluntary enlistment on earnings.

  This file contains detailed background information as of enlistment (e.g., test scores, height, weight). It thus provides valuable control variables for a propensity score matching study of the causal impact of workforce services (see Section 8.2).

- *Defense Enrollment Eligibility Reporting System (DEERS).* The DMDC maintains DEERS to store basic personnel information about service members and their dependents, including detailed addresses. While a service member is in the military, the database provides monthly information about family status, identifying all dependents such as spouse and children. These dependent records can provide a means of linking family members for analytic purposes. The records also include military occupation, gender, race/ethnicity, age, educational attainment, and marital status. These records are not updated after a service member leaves the military. They are thus of only limited use for analyses of veterans.

- *Pay Files.* DoD maintains the Active Duty Pay file, Reserve Pay file, and Retiree Pay file, which record monthly military pay, bonuses, and allowances during each member's service time, as well as retirement pay for those eligible (Martorell et al., 2008).

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[73] The Individual Ready Reserve is an unpaid, non-drilling, reserve component of the U.S. military. Voluntary military enlistees incur a mandatory service obligation. Some of that obligation is spent on active duty or in the Drilling Reserves; the balance is spent in the Individual Ready Reserve. DoD reserves the right to call them back to active duty, usually after exhausting Active and Drilling Reserve members.

Crucially for our purposes, IRR members are required to notify DoD of any change in address. The quality of the address data has been the subject of some discussion and some process changes. Nevertheless, Wiggins et al. (2014) achieved only a 17 percent response rate to a mail survey. Given mail survey rates with better address data (about 50 percent for address-based sampling), this might suggest poor address data.

- *GWT Contingency File.* DMDC maintains this file, which is intended to include a record for every activation (of a reservist) or deployment (of an active duty service member) after September 11, 2001, in support of the Global War on Terror (GWT). Each record in the file includes the start and end dates of each activation or deployment. This file can be used to calculate the cumulative amount of time a service member was activated or deployed (Martorell et al., 2008).

5.2.2 Department of Labor Data

This section begins with a discussion of DOL-held workforce data, which is compiled from data submitted by states on individuals' workforce system use. It then considers state data on UI payments.

- *DOL Workforce Data.* Each quarter, states submit to DOL data on individuals served by the workforce system, using a consistent record layout specified by DOL. In 2016, DOL introduced a new layout (the Participant Individual Record Layout, or "PIRL") to integrate performance tracking across the various funding streams and programs in its workforce system—including services funded through JVSG, ES, and WIOA. States are to submit to DOL participant records each quarter. DOL combines these records into a single national file of individual-level workforce data. Crucially for the study, these DOL workforce data contain details on the types and timing of intensive and non-intensive services received, which funding stream (e.g., WIOA, JVSG, ES) provided the services, participants' demographics including veteran status, and place of residence (state, county, zip code).[74] For performance reporting purposes, it also contains information on participants' employment and earnings outcomes, though limited in time frame and level of detail.

  In principle, *DOL workforce data could be used to categorize veterans by their use of the workforce system*, crucial information for constructing the sampling frame required to address the study's research questions. In addition, DOL workforce data include participants' demographics and a variety of barriers to employment, including disability status,[75] useful for describing characteristics of veterans served by AJCs.

  In the near term, the data quality and completeness of DOL workforce data since the PIRL layout was implemented are uncertain. The variety of state entities involved in reporting data are likely to experience some degree of challenge in transitioning to a new system. These challenges are likely to be progressively worked out over time, but any study using the data will need to ensure that data

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[74] This record layout presents the full set of items available in the DOL-only PIRL file: https://www.doleta.gov/performance/pfdocs/ETA-9172_DOL%20PIRL_FINAL_V25_062816.pdf.

[75] DOL workforce data contain several variables that capture whether the individual has a disability and type of disability. With regard to veterans, there is a "Disabled Veteran" field, which is coded as follows (1=Yes; 2=Yes, Special Disabled; 3=No): "Record 1 if the participant is a veteran who served on active duty in the U.S. armed forces and who is entitled to compensation regardless of rating (including those rated at 0%); or who but for the receipt of military retirement pay would be entitled to compensation, under laws administered by VA; or was discharged or released from activity duty because of a service- connected disability. Record 2 if the participant is a veteran who served on active duty in the U.S. armed forces and who is entitled to compensation (or who but for the receipt of military retirement pay would be entitled to compensation) under laws administered by the VA for a disability, (i) rated at 30 percent or more or, (ii) rated at 10 or 20 percent in the case of a veteran who has been determined by VA to have a serious employment handicap. Record 0 if the participant does not meet any one of the conditions described above. Leave blank if data element does not apply to the participant." *Source:* PIRL Documentation (OMB Control Number 1205-0521 ETA-9172 Expiration Date: 06-30-2019).

completeness and quality are fully understood (e.g., if all states are submitting files and if files that are submitted contain unique records for each participant spanning all programs).

A more serious concern is the lack of an SSN for participants in most programs. States are required to collect SSNs in their operation of WIOA. The states use those SSNs to link to earnings data in order to report WIOA (and previously WIA) standard outcomes (e.g., employment and earnings). However, though states collect SSNs, they are statutorily prohibited from sending them to DOL for inclusion in DOL's workforce data:

> *29 USC 3341 SEC. 501. Privacy.*
>
> *(b) (1) In general—Nothing in this Act (including the amendments made by this Act) shall be construed to permit the development of a national database of personally identifiable information on individuals receiving services under title 1 or under the amendments made by title IV.*
>
> *(2) Limitation—Nothing in paragraph (1) shall be construed to prevent the proper administration of national programs under subtitles C and D of title, or the amendments made by title IV (as the case may be), or to carry out program management activities consistent with title I or the amendments made by title IV (as the case may be).*

It is important to note that this general prohibition on collection of SSNs applies only to programs authorized under title I and title IV of WIOA. JVSG and Wagner-Peyser ES are not directly covered by that restriction.

5.2.3   Earnings Data

As noted in 5.2.2, workforce data for individual participants contains some data on employment and earnings, though limited in time frame covered and available only for participants in the workforce system, not for veterans who have not used services. This subsection considers additional sources for earnings and income data.

Any of the files discussed in this subsection could provide administrative data on employment and earnings. Employment and earnings are outcomes required by DOL's solicitation and the statute. Furthermore, earnings are the conventional focal outcome for analyses of the causal impact of the workforce system. Finally, pre-intervention earnings are a key control variable in propensity score matching approaches to causal impact analysis (see Section 8.2).

- *State UI Quarterly Wage Data.* By law, most employers are subject to a state Unemployment Insurance tax and must report quarterly, to the state UI agency, the earnings of each of their employees. These records are used to determine workers' eligibility for UI benefits if they apply for them. Hence, the wage records collected by the state UI agency consist of quarterly earnings, by employer, for all UI-covered employees in the state.

Relative to survey data on earnings, these state UI quarterly wage data are relatively inexpensive to collect and thus can be collected for a large sample for a long period of time (although data retention policies vary across states, with some states destroying data after a lag of only a few years). Thus, they allow precise estimates, for a whole sample and for subgroups, of net impacts of WIA on two of the evaluation's most important outcomes—employment and earnings. They also are fairly uniform across states and over time, a characteristic that facilitates a straightforward approach to analysis. Compared with survey data, UI wage data have the advantage that they are not subject to potential biases due to recall error and survey non-response.

These data do have drawbacks, however. First, though UI wage records cover more than 90 percent of workers, some important categories of workers are excluded, including federal employees, military personnel, and the self-employed. Second, the records do not provide data on earnings that employers do not report (i.e., off-the-books earnings). Third, the records will miss earnings if the SSN is reported incorrectly by the worker or by the employer.

Finally, the UI wage records in any given state do not cover a worker's earnings in another state. If a Local Workforce Investment Area is close to the border of a state, and it is likely that a large number of its customers might have earnings in the adjacent state, then we will investigate the possibility of collecting wage records from the adjacent state, as well. Another approach would be to explore access to the Wage Record Interchange System (WRIS), perhaps through participating states. WRIS is the system that states currently use to explore out-of-state earnings.[76]

Such state UI quarterly wage data were a standard source of administrative data on earnings in the 2000s. For two reasons, they have received less use more recently. First, national compilations of state UI quarterly earnings data (e.g., the National Directory of New Hires discussed below) are now available. Those compilations address concerns about missing out-of-state earnings and allow access to nationwide data without negotiating with all states individually. Second, privacy concerns have made access much more difficult and sometimes impossible.

- *National Directory of New Hires (NDNH).* Compiled by the Office of Child Support Enforcement (OCSE) at the Administration for Children and Families (ACF), within the U.S. Department of Health and Human Services (HHS), NDNH is a national database compiled from state UI quarterly wage and benefit records, augmented with federal date-of-new-hire data (Form I-9, Employment Eligibility Verification)[77]. That NDNH has national coverage makes it a more cost-effective source of those data than does approaching states individually for their records. HHS also has more-standardized procedures for requesting NDNH data than do states, with which arranging data sharing agreements can be more uncertain. ACF/OCSE makes data available for "research found by the Secretary … to be likely to contribute to achieving the purposes of part A or part D of the Social Security Act. 42 USC §653(j)(5)" (ACF/OCSE, 2017). These data are regularly used by federal research efforts on job training and other interventions.

DOL/CEO has extensive recent experience using these data for evaluations. Some time is required to complete agreements for data access, but recent experience suggests that a DOL study is sufficient justification. ACF/OPRE's experience is similar. Both organizations have limited-access servers that already host de-identified NDNH data and procedures to conduct disclosure review.

A drawback is that researchers do not have access to identified data. Instead, ACF/OCSE de-identifies data before providing them to a research team. To link NDNH data to other data sources, the team submits a file to ACF/OCSE, which then merges the submitted data to the requested NDNH quarterly file(s) and returns a de-identified file to the researchers. By contrast, in requesting UI data directly from states, it may be possible to receive files with SSNs included.

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[76] For more on WRIS, see https://www.doleta.gov/performance/wris.cfm.
[77] https://www.uscis.gov/i-9

Another drawback of the NDNH data relative to state files is that the NDNH's data on UI claims are less rich than in state UI benefits files. But the information on total quarterly benefits received should be sufficient for the study's purposes.

- *Social Security Administration (SSA) Earnings Data.* In its Master Earnings file, the Social Security Administration records individuals' earnings from all sources subject to Medicare taxes, which covers almost all U.S. employers and self-employment.[78] These data can be used to track earnings after veterans' separation from active duty service, and RAND has done so under data-sharing agreements. Angrist (1998) used these data in his analyses of the impact of voluntary enlistment on earnings.

  SSA controls the data and access is severely limited. Analysts submit SAS® software programs, which SSA runs and then returns output.

  Discussions with SSA staff suggest that gaining access to these data for this study would be a challenge. SSA has recently constricted the terms under which it grants access. To gain approval to access SSA data, the requester must establish how the study would provide direct benefit to the operation of SSA programs. Further investigation and conversation would be required to determine whether this study could meet that standard.

- *Internal Revenue Service (IRS) Tax Records.* These are the most comprehensive, highly detailed data on income in the United States. Virtues of tax records include that the data:

  - Cover essentially the entire U.S. population;
  - Include all sources of household income, whether earned or unearned;
  - Include earnings for each member of a household, including earnings that fall outside of covered employment for Unemployment Compensation;
  - Are available for all years; and
  - Contain identifiers (SSN, name, etc.) that permit the data to be merged to other sources.

  A disadvantage is that most information is available at an annual (not quarterly) frequency. Another disadvantage is that tax data are also extraordinarily highly protected. The IRS typically awards access through a restricted number of research solicitations. Researchers are also typically not allowed direct access to the microdata. Instead, researchers submit software programs to the IRS, and IRS staff run the programs to perform the analyses. There is some precedent for researchers directly analyzing data on-site at the IRS, working under the supervision of Treasury Department employees (Mervis, 2014). We would need to talk with Treasury staff to determine whether it would be feasible to access IRS data, and if so, under what conditions. Discussions with other researchers suggest that IRS data are the hardest data to which to gain access.

5.2.4 Other Administrative Data Sources

This section briefly describes other potentially promising administrative data sources.

- *State Unemployment Insurance (UI) Payment Data.* State UI files are one potential source of data on UI claims and benefit receipt by sample members. Although the specific data elements included in

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[78] The Code of Federal Regulations for Social Security, Title 20, Part 404 (https://www.ssa.gov/OP_Home/cfr20/404/404-0000.htm) lists employment categories that are exempt from Medicare taxes. Unlike Social Security earnings, Medicare earnings are not capped at the Social Security taxable limit.

UI claimant files vary across states, most states include the date an individual filed a claim, the industry in which the claimant had been working, eligibility status, the maximum benefit amount, the dollar amount of benefits paid, and the number of weeks in which payments were made. This file would also include information on the type of UI benefit paid (e.g., regular UI, UCX, Emergency Unemployment Compensation). An important strength of these administrative data is their accuracy; exact amounts and dates of benefit receipt are available, and accuracy does not depend on sample members' powers of recall, as it does in surveys.

This file contains the information on Unemployment Insurance receipt, as required by DOL's solicitation and by statute.

A design using state UI data would request files from both post-intervention and pre-intervention periods. Post-intervention UI benefit data are a potential source of outcomes data on benefit usage for the impact and cost analyses. Pre-intervention benefit data may also be useful as a matching variable or covariate in impact analyses, or as a way to group individuals by past unemployment duration in descriptive tabulations.

- *DD Form 214 List of Veterans.* VA maintains a list of veterans based on DD Form 214 data. The data are complete back to exits in the early 1970s. Data earlier than that appear to have been destroyed in a fire (such that DoD may not have access to those data either). More current information on veterans (e.g., address) is maintained in the "Corporate Record" in the Veterans Benefits Management System—but only for those veterans who have used VA benefits. That system centralizes most VA individual-level records. The exceptions are healthcare utilization records (in a separate VA health system database) and GI Bill education benefits (see below). Those data systems may have more current contact information.

- *Post 9/11GI Bill (PGIB) Data.* The VA maintains data on PGIB usage. Since September 2015, DMDC has maintained several files containing that information, which include cumulative data on when and at which institutions veterans use their GI Bill benefits for themselves and their dependents. Such data have been supplied through DMDC to RAND, but only for a limited duration. These files have been used in one RAND study (Wenger et al., 2017).

- *Other VA Veterans Benefits.* Information on most VA benefits, including cash payments to services delivered to disabled veterans, are maintained in the Veterans Benefits Management System.

- *National Student Clearinghouse (NSC).* Founded in 1993, NSC is a nonprofit organization that contracts with institutions of higher education to verify college enrollment and degree receipt for student loan agencies. NSC allows agencies and researchers to use enrollment data for a fee to track individuals as they transition in and out of college and complete college degrees. NSC maintains college enrollment data for institutions in years in which those institutions had an active contract with NSC. Between 1993 and 2010, NSC's coverage of college enrollment grew from 13 to 93 percent of all college enrollments. NSC also maintains a degree verification service for participating institutions. In 2010, about 70 percent of all U.S. colleges participated in this service. Participating institutions submit electronic degree records for all available years (Loughran et al., 2011). Recent changes have further expanded coverage of community colleges and non-degree-granting programs. These data were used by Loughran et al. (2011) in their analysis of the causal impact of military service on educational attendance and attainment. The data are also used widely by studies of the causal impact of job training. The Army is also using these data (see discussion in Section 7.2).

5.3   Existing Surveys

The previous section considered extant administrative data; this section considers existing surveys. Such surveys are of interest for several complementary reasons. First, a study might be able to link to them to provide outcomes (i.e., the final column of Exhibit 5.1). Second, they might provide information towards a sampling frame (i.e., the first two columns of Exhibit 5.1), for which the next chapter discusses challenges and opportunities. Third, they might provide free-standing data that would address some of DOL's research questions. Finally, existing surveys provide insights into how a study-specific survey might be structured.

Specifically, this section considers four survey efforts: the Current Population Survey and its annual Veterans Supplement, the American Community Survey, the National Survey of Veterans, and the VA Longitudinal Survey.

- *Current Population Survey (CPS).* The CPS is a nationally representative monthly survey of approximately 60,000 addresses conducted by the Census Bureau for DOL/BLS.[79] The survey's target population is non-institutionalized civilians. Members of the active duty military in surveyed households are excluded from tabulations. Veterans—that is, those who have left active duty—are included in tabulations.

  Veterans in the workforce are about 5 percent of the adult population, and households have an average of two adults; thus, the CPS captures about 5,000 veterans in the workforce. For aggregate tabulations, these sample sizes are more than sufficient. However, for tracking month-to-month or year-to-year changes or for tabulations of subgroups (e.g., by age bands), the samples are on the small size (see discussion in Section 3.2.1). As a result, there is considerable sampling variability; apparent, even moderate differences across time and between groups are often simply due to statistical noise. The survey attempts to interview the household at the sampled address. Households that move are not followed. In various calendar months, the CPS includes additional questions on certain topic areas.[80]

  The primary purpose of the survey is to promptly generate monthly unemployment statistics. To that end, the survey interviews households for 4 months in a year, for the same 4 months in the next year (separated by an 8-month period of being out of the survey), and then drops the case. This design increases the precision of month-to-month and year-to-year changes. However, the design implies that the number of unique addresses in a year is about 180,000 (i.e., 15,000 addresses beginning a four month period of interview × 12 months).

  For analyses of veterans, there are four related, but different, types of CPS data:

  - *Monthly*. In addition to the basic questions about labor force status (employed, sector, hours, unemployment), every month the CPS asks three basic questions about veteran status.[81] These

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[79]   https://www.census.gov/programs-surveys/cps/about.html

[80]   https://www.census.gov/programs-surveys/cps/about/supplemental-surveys.html

[81]   The exact questions are as follows (https://www2.census.gov/programs-surveys/cps/techdocs/questionnaires/Demographics.pdf):

AFEVER Did (name/you) ever serve on active duty in the U. S. Armed Forces? 1=Yes, 2=No.

AFWHEN IF NECESSARY: Previously I was told that (name/you) served on active duty in the U. S. Armed Forces. When did (you/he/she) serve? Enter all that apply, separate with commas. Mark up to four that apply:

data are used to generate monthly data on labor market status (e.g., employment rate, unemployment rate) by veteran status. Not-seasonally-adjusted statistics are reported in Table A-5 of the monthly "Employment Situation" news release.[82] BLS appears to be moving to construct seasonally-adjusted estimates. DOL/VETS reports these monthly estimates prominently on its website (https://www.dol.gov/vets/) under "VETS News and Blog" and in its monthly newsletter (https://www.dol.gov/vets/newsletter/).

- Because of the CPS's 4/8/4 sampling scheme, any comparisons across months need to carefully adjust for the month-to-month and year-to-year sample overlap. Savych et al. (2008), Walker (2008, 2010), and Loughran (2014) use annual averages of monthly data.

- These monthly files are merged across months to generate much larger samples and therefore more precise estimates. Such merged estimates are reported, with appropriately computed standard errors, in the annual March or April Bureau of Labor Statistics news release "The Employment Situation of Veterans."[83]

- *Veterans Supplement*. Since 2011, in August of each year, the CPS includes a supplement with additional questions about veterans, including service branch, National Guard membership and active duty service, service-related disability, timing and location of service, participation in TAP and satisfaction with it, post-service job training, and other contact with the workforce system and satisfaction with it. Jointly funded by the VA and DOL/VETS, these data are also reported on in the annual BLS "The Employment Situation of Veterans" news release. Greenberg and Rosenheck (2007) use the 1989, 1999, and 2003 data. Walker (2010) uses the 2009 data.[84]

- Given that the CPS Veterans Supplement is funded by VA and DOL/VETS, it might be possible to change the specific questions asked in service of this study. However, doing so does not seem promising. With about 5,000 veterans in the workforce captured by CPS, we would expect to find only about 100 who used intensive workforce services. That sample seems too small to answer the study's research questions.

- *Annual Social and Economic Supplement (ASEC)*. For more than half a century, in March of each year (as respondents are completing their income tax forms), the CPS includes a supplement collecting detailed information on annual earnings and participation in public programs (e.g., TANF, SNAP, Medicaid). However, information on veteran status is limited to the three questions from the monthly questionnaire. Thus, these data can be used to tabulate detailed information on income and program participation by simple measures of veteran status.

1=September 2001 or later, 2=August 1990 to August 2001, 3=May 1975 to July 1990, 4=Vietnam Era (August 1964 to April 1975), 5=February 1955 to July 1964, 6=Korean War (July 1950 to January 1955), 7=January 1947 to June 1950, 8=World War II (December 1941 to December 1946), 9=November 1941 or earlier.

AFNOW (Are / Is) (name/you) (now/still) in the Armed Forces? 1=Yes, 2=No.

[82] Find "Employment Situation" releases here: https://www.bls.gov/news.release/empsit.toc.htm. A copy of Table A-5 can be found here: https://www.bls.gov/news.release/empsit.t05.htm

[83] See https://www.bls.gov/news.release/vet.nr0.htm for the most recent release, covering calendar year 2016.

[84] See https://www2.census.gov/programs-surveys/cps/techdocs/cpsaug16.pdf (especially Attachment 8) for more detail.

- *Outgoing Rotation Group Questions*. In months 4 and 8 (known as the "outgoing rotation groups" because they will not be surveyed in the next month), the CPS asks additional questions about usual hours worked, usual hourly earnings, and usual weekly earnings. However, information on veteran status is limited to the three questions from the monthly questionnaire. Thus, these data can be used to tabulate limited information on earnings by simple measures of veteran status. Merging interviews across the 12 months in a calendar year, this yields a sample three times as large as in the ASEC or any other single month. Walker (2010) uses these data.

- *American Community Survey (ACS).* The ACS is another Census Bureau survey with a much larger sample—more than 3.5 million annually.[85] After the 2000 Census, the ACS replaced the Census Bureau's Long Form, becoming the nation's most definitive source of information on population characteristics—including data on income, receipt of government benefits, household composition, and demographics.

  Crucially for purposes of the study, the ACS includes the following questions on veteran status[86]:

  - *"Has this person ever served on active duty in the U.S. Armed Forces, Reserves, or National Guard?"* (The survey has response options for never served, served in reserve components only, or have served on active duty.)
  - *"When did this person serve on active duty in the U.S. Armed Forces?"* (Response categories are provided for different military campaigns or periods between active campaigns.)
  - *"Does this person have a VA service-connected disability rating?"*
  - If the person has a disability rating, *"What is this person's service-connected disability rating?"*

  The Census Bureau regularly uses the ACS for analyses of veterans. For example, Census provides an infographic on the geographical distribution of veterans[87]; Holder (2017) considers rural veterans, and Lofquist (2017) considers female veterans.

  As we discuss in Section 7.3, the Census Bureau has an active program of matching administrative data to ACS data. In contrast to the CPS, it appears that the ACS is large enough to make that an option worthy of serious consideration.

  It seems unlikely that additional questions could be added to the ACS. Even if possible, the timeline for doing so would be several years.

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[85]   https://www.census.gov/programs-surveys/acs/

[86]   See https://www2.census.gov/programs-surveys/acs/methodology/questionnaires/2017/quest17.pdf for the full questionnaire. The 2010 ACS Content Test explored questions about veterans status. Based on that test, the veterans questions were revised. See Holder and Raglin (2014) for details. The quoted question wording incorporates those revisions. See https://www.census.gov/content/dam/Census/topics/population/veterans/about/historical-veteran-questions-and-instructions.pdf for a discussion of veterans questions in the long history of the Census Bureau.

[87]   https://www.census.gov/library/visualizations/2016/comm/cb16-ff21_veterans-day.html?cid=fff_2016_honoring_veterans

As is discussed in Section 7.3, there is some precedent for using the ACS as a sampling frame; that is, resurveying ACS respondents who indicate that they are veterans in the workforce. Conditions for doing so are extremely limited, but not impossible.

- *National Survey of Veterans (NSV).* For planning and evaluation of programs, the VA is required to monitor the characteristics, program utilization, and outcomes for veterans (Section 527, Title 38 U.S. Code). It does so in part by funding an intermittent National Survey of Veterans. NSVs were fielded in the late 1970s, 1987, 1993, 2001, and most recently in 2010 (Westat, 2010).

  The 2010 survey was conducted by Westat, using address-based sampling—that is, a stratified random sample of addresses. (We discuss ABS in detail in Section 6.2.2.) To the random sample of addresses, Westat matched information on the addresses of veterans from two DoD Prior Service Military Address files: one containing records for military retirees and the other containing information on active duty service members who had separated from active duty within the past 5 years. These addresses were more likely to include a veteran and were therefore oversampled.

  Overall, approximately 140,000 households were sampled. Sampled households were sent a pre-notification letter, a screener questionnaire that attempted to identify households with a veteran, and a thank-you/reminder card. Those 140,000 households were expected to include about 15,000 veterans. Projected responses rates were about two-thirds, yielding a final sample of about 10,000 veterans. In addition to returning the mail survey, households were given the option of responding online or by phone interview. Actual response rates were slightly lower, with 8,710 returned veterans surveys (58 percent). The low response rate presents a potential concern about how representative the sample is of the full population of veterans. Clearly VA and OMB felt that the lower response rate was acceptable, at least for the NSV.

  Discussions are now underway about a follow-on survey wave. VA has contacted the Census Bureau about the possibility of it doing the survey. Further follow-up with VA would be required to learn how those discussions have progressed.

- *VA Longitudinal Survey.* As required by the 2008 Veterans' Benefits Improvement Act (PL 110-389), the VA is conducting a 20-year longitudinal study of the outcomes of individuals who apply for vocational rehabilitation and employment services and began rehabilitation plans in FYs 2010, 2012, and 2014. The study captures veterans' post-program outcomes, including employment and earnings.

6. Potential Need for a Study-Specific Survey

Following the discussion of extant data above, this chapter turns to considerations related to the study fielding a new survey. To establish a point of departure, Section 6.1 begins by reviewing which research questions can be covered by extant data and which cannot. To address research questions that cannot be covered by extant data, a study-specific survey will be needed. In addition, a study-specific survey might be the best way to collect some or all of the information required for other research questions. Section 6.2 considers the closely inter-related issues of constructing a sampling frame and field methods. Section 6.3 considers strategies for addressing the requirement for a "longitudinal study" using a study-specific survey. Section 6.4 briefly considers survey content and possible sources for survey items.

6.1 Domain Coverage in Extant Data

As argued in Chapter 5, extant data are less expensive than a new survey, and they (especially extant *administrative* data) usually yield higher-quality information. Extant data do not cover all domains of interest in this study, however; that is, they do not allow answering all research questions.

The key extant data sources on veterans pertinent to this study appear to be the following:

- *Administrative data on veterans*—DoD and VA.

- *Administrative data on all workers*—NDNH, state UI data, SSA data on earnings (collected by the IRS and passed to SSA to establish eligibility for and the level of benefits), IRS tax return data.

- *Administrative data on workforce system users*— individual-level workforce data (either national DOL or state-held).

- *Census Bureau survey data*—the ACS.

  Exhibit 6.1 summarizes which domains can be covered with which extant data. The first column lists the research questions.[88] The second column provides a summary comment about which extant data source might help to address the research question(s). Navigational comments internal to the exhibit appear in <brackets>.

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[88] Research questions 1-16 are taken from the statute (see Section 2.2), slightly reordered. Research questions 17-19 are taken from DOL's solicitation (see Section 2.3). Throughout, we recast the statute's areas of interest as questions, usually using phrasing from the solicitation. In addition, we note the research questions for which the solicitation adds additional detail. Furthermore, in general, we reword the questions in term of the individual.

Exhibit 6.1. Extant Data to Answer DOL's Research Questions

Research Question (RQ)	Availability in Extant Data[a]
RQ 1. What are the types and packages of services or policy approaches provided under American Job Center's job counseling, training, and placement service for veterans?	• Not descriptive—implementation • Does not require data on individual participants • Probably requires key informant interviews and site visits to AJCs • DOL or state workforce data can be used to capture services received by veterans served by a particular AJC
RQ 2. What key components or approaches are successful or contribute to the success of job counseling, training, and placement service for veterans?	• Not descriptive—causal • Requires data on outcomes and background variables <see preceding rows>
RQ 3. What are the costs of job counseling, training, and placement service for veterans? Do estimates of benefits of providing services or implementing policy outweigh the costs of those initiatives?	• Not descriptive—costs and cost-benefit • Requires data on outcomes and background variables <see preceding rows> • Requires cost data from AJC partners • Requires estimates of impact; in particular on earnings <see previous row>
RQ 4. What was the average number of months the individual served on active duty?	• In DoD administrative data
RQ 5. What are the disability ratings of the individual?	• In DoD administrative data
RQ 6. Did the individual receive unemployment benefits? What type of unemployment benefits?[b]	• Any UI benefits: in the NDNH (quarterly) and in state UI data • Type of UI benefits: State UI payment data.
RQ 7. What was the average number of months the individual was employed during the year covered by the report?	• Monthly data on employment: does not appear to be available in any administrative data • Quarterly data on employment (i.e., positive earnings): in the NDNH and state UI data, and for 4 quarters after program exit in DOL or state workforce data • Annual data on employment (i.e., positive earnings): in SSA data and IRS tax return data
RQ 8. What is the employment status of each individual? What is the average number of months the studied veterans were employed during each of the 5 years under study?	*<data same as previous row>*
RQ 9. What was the average annual starting and ending salaries of the individual during each of the 5 years under study?	• If "salary" is interpreted as quarterly earnings by job: in NDNH data and state UI data • Hourly wage and earnings: in the ACS
RQ 10. What was the average annual income of the individual during each of the 5 years under study?	• If "annual income" is interpreted as annual earnings: in NDNH data and state UI data, as well as for 4 quarters after program exit in DOL or state workforce data • If "annual income" is interpreted to include individual sources of income beyond earnings (e.g., self-employment, investment income): in IRS tax return data • In the ACS
RQ 11. What was the average total household income of the individual during each of the 5 years under study?	• In IRS tax return data • In the ACS

Research Question (RQ)	Availability in Extant Data[a]
RQ 12. Did the individual own their principal residences?	• In the ACS
RQ 13. Does the individual believe that any service provided by a Disabled Veterans' Outreach Program specialist or Local Veterans' Employment Representative helped the individual to become employed?	• Appears unavailable in any extant data
RQ 14. For those individuals who believe that such services helped the individual to become employed, (i) did the individual retain the position of employment for a period of 1 year or longer; and (ii) does the individual believe that such a service helped the individual to secure a higher wage or salary?	• Appears unavailable in any extant data
RQ 15. Under what conditions was the individual discharged or released from the Armed Forces?	• In DoD administrative data
RQ 16. Has the individual used any educational assistance to which the individual is entitled under this title?	• In VA administrative data
RQ 17. Has the individual participated in a rehabilitation program under chapter 31 of this title?	• In VA administrative data
RQ 18. Did this individual have contact with a One-Stop Career Center employee while attending a workshop or job fair under the Transition GPS Program of the Department of Defense?	• Available in DOL or state workforce data • Might be available in the CPS
RQ 19. What are the demographic characteristics of this individual?	• Some demographic information (e.g., gender, age, race/ethnicity): in DoD administrative data and DOL or state workforce data • More demographic information (e.g., marital status, number of children living at home): in the ACS

Key: ACS/American Community Survey. AJC/American Job Center. CPS/Current Population Survey. IRS/Internal Revenue Service. NDNH/National Directory of New Hires. SSA/Social Security Administration. UI/Unemployment Insurance.

Note: Unless otherwise noted, all research questions are descriptive.

[a] Non-descriptive questions noted.

[b] Types of UI include regular UI, UCX/Unemployment Compensation for Ex-Servicepersons, UCF/Unemployment Compensation for Federal Employees, and various recession-period UI programs (EUC/Emergency Unemployment Compensation, EB/Extended Benefits). A broader set of types would also include Interstate Claim for Benefits and Combined Wage Claims. For example, see http://labor.alaska.gov/unemployment/ui-types.htm for more on these various types of UI.

We interpret Exhibit 6.1 as implying that *a pure administrative data study could address most—but not all—of the research questions*. In particular, the key administrative data systems are DoD personnel files (for demographics, conditions of service, type of discharge, disability status), VA program records (use of education benefits and rehabilitation services), NDNH data (for quarterly earnings and employment), and DOL or state workforce data (for demographics, services received, and some employment and earnings outcomes).

This statement requires several caveats:

1. This statement assumes that we can construct an appropriate sampling frame—that is, a list of veterans, with identifiers (to allow matching), and assigning veterans to one of the three workforce system utilization groups, that assignment most likely from administrative data. The crucial role and challenge of constructing a sampling frame was emphasized in Chapter 2. Section 9.2 discusses "broad options" for generating such a frame. That discussion suggests that generating a frame without a new survey could be challenging.

2. In making that statement, we assume the following leeway in wording the research questions (DOL will ultimately need to determine the appropriateness of that leeway):

   a. *Monthly employment (RQ 7).* Quarterly employment data are available in administrative data, though monthly data appear not to be available. Furthermore, it is unclear whether high-quality retrospective data on monthly employment could be collected—even in a new study-specific survey.

   b. *Type of UI benefits (RQ 6).* Quarterly dollars of UI benefits are available in NDNH data, but not type. Type of benefits is available in state UI data, but not in any national database.

   c. *Starting and ending salaries (RQ 9).* This is available in the NDNH, assuming "salary" is interpreted as quarterly earnings by job. Otherwise, this would probably require two new study-specific surveys (at the start and end of the 5-year study period).

   d. *Annual income (RQ 10).* This is available in the NDNH, assuming "income" is interpreted as earnings. Otherwise, this would require IRS, ACS, or new study-specific survey data.

3. Data beyond what is contained in the four key extant administrative data systems (i.e., DoD personnel files, VA program records, DOL or state workforce data, and the NDNH) would be required to answer the following descriptive research questions:

   a. *Household income (RQ 11).* This is available from IRS tax return data, in the ACS, or from a new study-specific survey.

   b. *Home ownership (RQ 12).* That is available in ACS data or in a new study-specific survey.

   c. *Perceptions of the quality and impact of services (RQ 13 and RQ 14).* Some relevant information might be available in extant VETS customer satisfaction surveys. But it is unlikely to be nationally representative and may not contain information on veteran status. Answering this research question will likely require a new study-specific survey.

6.2 Constructing a Frame for a Survey

DOL may ultimately determine that a survey is required, either because some of the key administrative data sources cannot be obtained or because some of the research questions do not appear to be answerable through existing data. This section describes approaches to creating the frame for a survey. These approaches vary with the information available to the study to identify and contact veterans in each of the three service-receipt groups specified by DOL and statute.

Broadly speaking, there are two approaches to building a sampling frame for a study-specific survey: (1) drawing a frame from merged administrative data or (2) starting from scratch and generating a study sample using address-based sampling (ABS). Frame creation is a key issue for the study. It is a primary

driver of the study's potential costs, as identifying a sample without a pre-existing frame would be enormously expensive. Potential steps to reduce those costs would likely mean stratifying the sample in ways that reduce its statistical power. This section considers these two approaches in turn.

6.2.1 Constructing a Frame from Merged Administrative Data

The first approach begins from an administrative data frame. For cost reasons, this is by far the preferred option. But it requires overcoming substantial confidentiality and data access challenges. Creation of such a frame study might proceed as follows:

- Matching DoD data on veterans to workforce data from every state (DOL workforce data does not include SSNs and is therefore not sufficient[89]) would yield a list of veterans—including their names, SSNs, dates of birth, and recent addresses—and their use of workforce services. Further matching to earnings data would allow excluding those out of the labor force—more precisely, those with no recent earnings.[90]

- For a fee, a commercial data aggregator (e.g., Acxiom, https://www.acxiom.com/) could append to each record an address, telephone numbers, and email addresses. Some contact information could also be extracted from the Prior Service Military Address File and DoD's DD Form 214 data (both of these data sources were discussed in Section 5.2.1; see Ramsberger et al. [1995] and Wiggins et al. [2014] for a similar strategy).

- A survey firm could use this information to field a survey using some combination of mail out/mail back, mail out/call back, mail out/web back, dial out (computer-assisted telephone interviewing, or CATI), or in-person locating—probably handing a cell phone connected to the centralized telephone center to the respondent (and then CATI).[91]

6.2.2 Using Address-Based Sampling to Construct a Frame

In the absence of a proper frame, the alternative would be to randomly contact households looking for veterans. Until recently, that process would have involved random digit dial (RDD) of telephones—both landlines and cell phones (American Association for Public Opinion Research [AAPOR], 2017). But the more recently developed Address Based Sampling (ABS) approach is likely to be more attractive for this study.[92] Under ABS, a stratified sample of all addresses—without any information on veteran status—is drawn from U.S. Postal Service Computerized Delivery Sequence (CDS) file.[93] The survey is then conducted via mail-out/mail-back (not phone or email).

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[89] As mentioned earlier, JVSG is an exception. Because DOL has recently begun requiring states to include SSNs for JVSG participants in their PIRL submissions, a study limited to JVSG participants (rather than all veterans served by DOL programs in AJCs) could be conducted using national PIRL data, instead of state data.

[90] The analysis would define group status (intensive, non-intensive only, or no services) based on one status in the base year. Over the next four years, outcomes and workforce systems use would be tracked. Nevertheless, for the study, group membership would be fixed based on use of the workforce system in the base year.

[91] Available evidence in general (Medway & Fulton, 2012) and for ABS in particular (Montaquilla et al., 2013) suggests—counterintuitively—that offering multiple modes lowers response rates.

[92] As with the National Survey of Veterans discussed in Section 5.3.

[93] For more on ABS, see Brick et al. (2011), Montaquilla et al. (2013), Amaya et al. (2015), Williams et al. (2016), AAPOR (2017), and Couper (2017). For more on ABS as applied to the National Survey of Veterans, see Westat (2010) and Han et al. (2010).

The virtues of ABS, relative to RDD, are that:

- *ABS is cheaper per case.* ABS uses the Postal Service rather than RDD's phone interviewers. Costs per case are therefore much lower than for RDD.

- *ABS allows oversampling of small areas* (Couper, 2017),[94] whereas RDD does not (especially with the proliferation of cell phones). Because, veterans are geographically concentrated (as we show in Section 3.1),[95] costs can be reduced by focusing mailings on those areas with proportionally more veterans.

In addition, as in the 2010 National Survey of Veterans, simple ABS could be augmented with address data from the Prior Service Military Address file, DoD's DD Form 214 data, and Military Retiree Pay file. See the discussion of the 2010 NSV in Section 5.3 of this report, Westat (2010), and Han et al. (2010) for more ideas on field methods. See AAPOR (2017) for a current discussion of technical issues in ABS.

ABS need not be simple random sampling. A range of strategies would plausibly raise the probability of sampling a veteran in the workforce, and perhaps a veteran who uses workforce services or even intensive workforce services. The obvious strategy is to target mailings to where veterans are more likely to live. ABS uses street addresses. Those street addresses can easily be matched to information on low-level geography. ACS data can be used to tabulate the prevalence of a veteran in the household for relatively small areas (at least units of 100,000[96] and perhaps ZIP codes).[97]

From there, a stratified sampling approach would sample all geographic units—to maintain national representativeness—but would sample units with higher fractions of veterans in the workforce at higher rates. For a given precision, this sampling strategy will have lower cost. The greater the geographic concentration of veterans—as opposed to equal dispersion—the greater will be the savings over unstratified random sampling.

Possible sources for information on where veterans might be more concentrated include:

- *Government lists of addresses for veterans.* A variety of sources might supply addresses for veterans. Those sources include DoD exit forms (DD Form 2648), Defense Enrollment Eligibility Reporting System data for current and past reservists, and VA address files.

- *Commercial data aggregators' imputation of veteran status.* It is possible that some commercial data aggregator imputes veterans status for ABS sample files

None of these data sources provides a complete list of veterans. Even for veterans in these files, many of the addresses will no longer be current—with differing hit rates for different lists. Again, strategies would

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[94]   The ACS could be used to identify areas with high concentrations of households with veterans in the workforce.

[95]   Trulia [www.trulia.com], "Where veterans live," *Forbes* website, November 10, 2014. Retrieved from https://www.forbes.com/sites/trulia/2014/11/10/where-veterans-live/#13f7b2077484

[96]   "Public Use Microdata Areas (PUMAs), " U.S. Census [website], https://www.census.gov/geo/reference/puma.html

[97]   "ZIP Code Tabulation Areas (ZCTAs)," U.S. Census [website], (https://www.census.gov/geo/reference/zctas.html

involve sampling households on these lists and households not on these lists, with the former having much higher probabilities of selection.

6.3   Addressing the Requirement for a Longitudinal Study

The DOL solicitation and statute require a longitudinal study. Even if initial contact were through a survey, longitudinal follow-up might be possible through administrative data. However, longitudinal follow-up through a subsequent survey is also possible. Issues about access to administrative data—in particular, whether respondents to the initial survey will provide identifiers—might require that longitudinal follow-up also be via survey; i.e. multiple waves of a study-specific survey. Presumably, the first wave would collect contact and tracking information such that subsequent waves need not use ABS (or RDD). Even with contact and tracking information, a multiple-wave survey is likely to be quite expensive.

In part, the high cost of a longitudinal survey arises from the desire to achieve high response rates at subsequent waves in order to yield a truly longitudinal study. Such high response rates are likely to be particularly important for the rare cases who use intensive workforce services. Fielding costs per complete rise rapidly with the target response rate. Target response rates for subsequent waves would probably be 70 percent or above. To reach those response rates, more expensive field locating would probably be required.

In addition, the cost of a longitudinal survey is higher because of the need to remain in contact throughout the extended duration of the study. Current standard approaches to doing so involve moderate levels of inter-survey contact. Strategies include post cards and email attempting to catch change in contact information (e.g., address, telephone number, email account).

We defer discussion of appropriate sample sizes to later in the project. Here we note that DOL testimony on the proposed legislation mentioned 4,000 completed surveys in each of the three groups—veterans using intensive workforce services, those using only non-intensive workforce services, and those using no workforce services.[98] For now, we will use those sample sizes. We acknowledge that they need to be revisited.

6.4   Survey Content and Survey Items

Having considered a frame and field methods in the previous sections, this section briefly considers survey content—on the assumption that there is only a survey. If a survey would be linked to and augment administrative data, survey content could be narrower.

Exact survey content would vary with information available from the frame. To save space on the questionnaire, information available from the frame or other existing data sources would not typically be collected again in a survey. Broad areas of survey content would likely include:

● *Veteran status*, perhaps confirming information from the frame

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[98]   From testimony by then DOL Assistant Secretary for Veterans' Employment and Training Kelly to the House Committee on Veterans' Affairs, Subcommittee on Economic Opportunity on March 25, 2014, on the bill that would, ultimately, lead to this study. Written testimony prepared for the event included a discussion about goals and design options. That testimony suggested a target sample size of 12,000—4,000 veterans in each of the three utilization groups.

- *Details of military service*

- *Broad classification of use of the workforce system and details of any contact (including veterans' specific programs, non-veterans-specific programs, and non-DOL programs)*

- *Use and perceptions of the workforce system*

- *Basic demographics*

- *Outcomes* as specified in the statute and DOL's solicitation

If the goal is to link survey responses to administrative data and the frame did not include that information, then the survey would need to collect identifiers—name, date of birth, SSN. If, to address the requirement that the study be longitudinal, the plan was to interview the same veterans more than once, then the survey would want to collect additional contact information—other addresses, other phone numbers, other email addresses, social media accounts—for the respondent and for people likely to remain in contact with the respondent (e.g., family, close friends). That information would ease re-contact.

The surveys discussed in Section 5.3—Current Population Survey, American Community Survey, 2010 National Survey of Veterans—are promising sources for wording of specific questions. Other possible sources include the 2007 VA Employment History Survey (Abt Associates, 2008), and the 2003 Survey of Retired Military (DMDC, 2006).

7.   Matching across Data Sources

A key challenge in designing this study is to get access to three key pieces of information: (1) a list of veterans and their experience in the military; (2) a list of veterans using workforce services, with details on utilization; and (3) records of veterans' earnings. To obtain those, the study would have to develop data sharing arrangements with data custodians from other federal or state entities, because DOL does not control data that provide that information.

Current statutes and interpretations thereof often lead data custodians to require that any access and use of their data *benefit their agency*. The statutory requirement that DOL conduct a study of its workforce system would likely not satisfy that requirement for custodians holding lists of veterans (item 1 above) and earnings data (item 3 above). Furthermore, there is a statutory prohibition on DOL constructing a national database of workforce utilization (item 2 above) that applies at least to the WIOA Adult and Dislocated Worker Programs (see discussion in Section 5.2.2).

Taking into account these challenges, this chapter considers options for matching across data sources. Section 7.1 describes strategies for merging and analyzing extant data. Section 7.2 discusses limitations to data sharing under the Privacy Act of 1974. Section 7.3 describes a broad data match done by RAND in close collaboration with the DMDC, which might serve as a partial model for data matches to be done as part of this study. Section 7.4 discusses matching extant data within the Census Bureau. Section 7.5 discusses a current data sharing arrangement between DoD and DOL that could provide a source of a list of veterans. Section 7.6 considers issues raised by matching data from a study-specific survey to extant data sources. Finally, Section 7.7 summarizes the key issues raised in the chapter, and what further exploration could be undertaken to identify solutions.

### 7.1   Strategies for Merging and Analyzing Extant Data

No single data source is sufficient to answer all of the study's research questions; few of the research questions can be answered from any single data source. For example, assessing the impact of services on veterans' outcomes requires merging data on services received with data on outcomes achieved. DOL or state workforce data is the best source of information on services received, but has only limited data on outcomes (in particular, employment and earnings). Thus, analyses of the relation between use of the workforce system and subsequent earnings would require merging individual-level workforce records with other sources of data on employment, earnings, and benefits received—such as NDNH, SSA, and/or IRS files.

7.1.1   Direct Versus "Safe Harbor" Matching

Generically, the problem is as follows. The study would benefit from—and some research questions likely require—merged data. The left side of Exhibit 7.1 represents the direct way to do so. In this example, the study has access to two data sets (DS-1 and DS-2) that have an identifier in common, usually the SSN. In that scenario, the study team can match the data itself.

This direct approach requires that the study have access to SSNs for both data sets. However, concern about privacy and data security lead many data custodians to refuse to release data files with SSNs.

Exhibit 7.1. Comparison of Direct and Safe Harbor Approaches
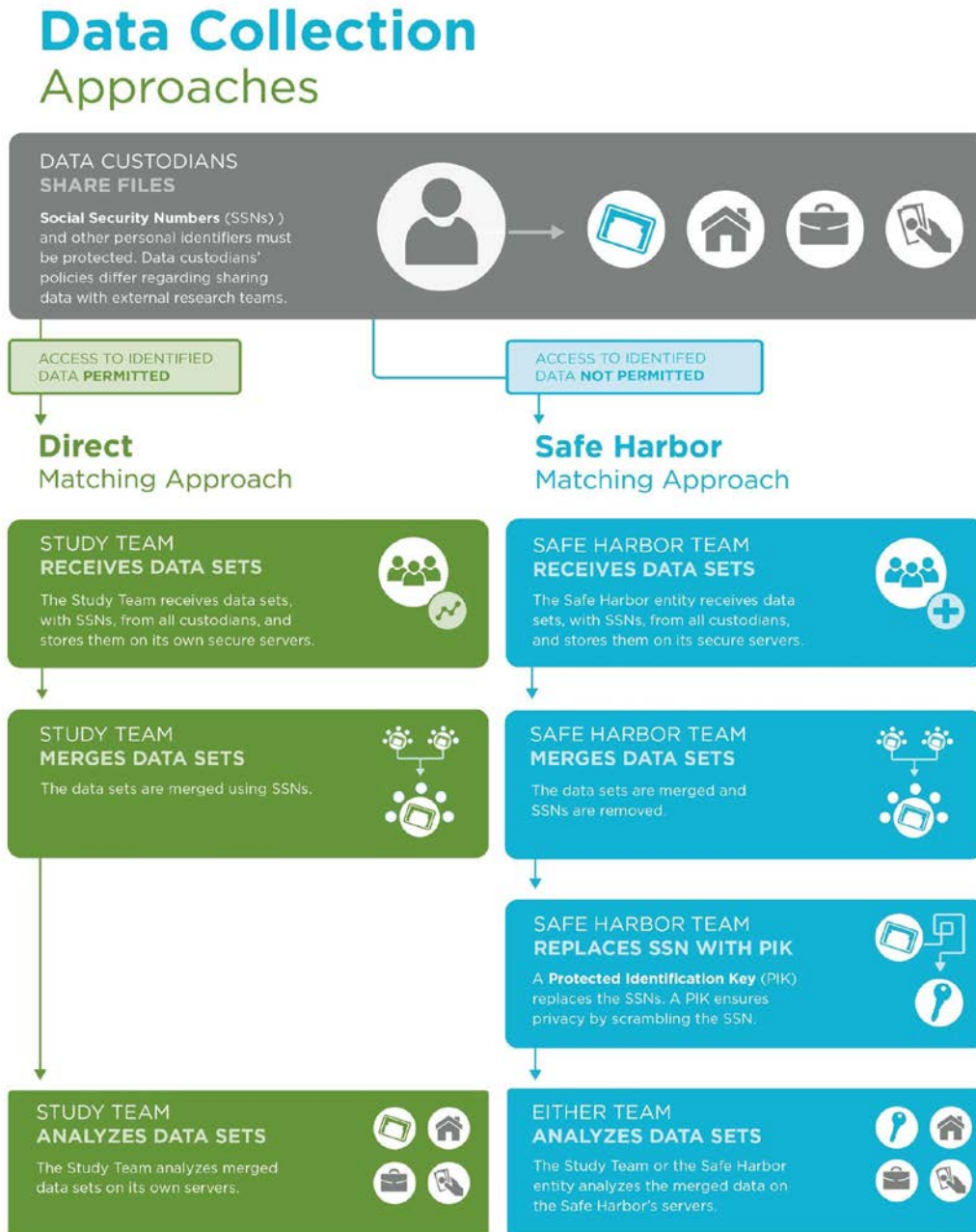
Even with that restriction, data matching may still be possible. The right-hand side of Exhibit 7.1 depicts what we generically call "safe harbor matching." In safe harbor matching, the study team never has access to SSNs for one and perhaps either data set. Instead, some third party (perhaps the custodian of one of the data sets) matches based on SSN, performing the matching inside its secure data facility. To do so, the third party replaces the SSN (and all other potential identifiers) in both data sets with a common identifier. This identifier, other being common between data sets, is meaningless (i.e., cannot be used to match to any data outside the safe harbor). Exhibit 7.1 uses Census Bureau terminology, where the common identifier (the SSN scrambled) is called a "Protected Identification Key," or simply "PIK." Some

data custodians that will not release data files with identifiers *will* allow safe harbor matching (inside a mutually acceptable safe harbor).

Some such safe harbor scheme covering a broad swath of federal data appears to be what the Commission on Evidence-Based Policymaking has in mind with its recommendation to establish a "Secure Data Service"[99]:

> *The Commission's recommendations for improved data access and strong privacy protections rely heavily on the establishment of the National Secure Data Service. Being able to combine data within a secure environment will be an increasingly vital aspect of the evidence-building community's capacity to meet future demand from policymakers. Increased transparency will enable the public to be informed about how data are being used to improve their government, even as data are being stringently protected. ... The Commission's recommendations to implement the National Secure Data Service include: Build on the infrastructure and expertise already developed in government, including at the U.S. Census Bureau, to ensure that data linkages and access to confidential data for statistical purposes are conducted in the most secure manner possible.* (Commission, 2017, pp. 2-3)

Note, however, that such safe harbor matching would not provide the study with access to identifiers. A survey would therefore not be possible.

7.1.2 Three Variants of "Safe Harbor" Matching

Below are three potential ways to carry out safe harbor matching.

- *Variant 1. Third Party Matches Data and Returns a De-identified File to the Study Team*. The first variant will work when the study team is not allowed access to any of the data files with SSNs. The study team arranges for each of several data custodians to submit their files with SSNs to the third party. In each submitted file, the third party replaces each SSN with a PIK. The PIK'd files are returned to the study team, which merges them using the PIKs, and conducts the analysis on the study team's own computers.

  This is the variant that RAND uses to analyze GI Bill data. The VA passes identified data to the DMDC, which then matches the VA data to DoD personnel data, de-identifies the data, and passes the matched de-identified file to RAND. RAND never sees the true identifiers.

  Clearly, this variant would only work for the VETS study if the study has no access to SSNs for any of the data sets. Having SSN access would allow the study to reverse-identify the SSNs from the PIKs.

- *Variant 2. Third Party Matches Data, and Study Analyzes Data on a Limited-access Server.* Under this variant, the study team arranges for data custodians (perhaps the study team itself) to submit their files with SSNs to the third party. The third party replaces each SSN with a PIK, then matches based on that PIK. The PIK'd files are then placed on a limited-access server. On the server, the study team

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[99] Advancing the recommendations of the Commission, H.R. 4174, Foundations for Evidence-Based Policymaking Act of 2017, calls for establishing an Advisory Committee that would "evaluate and provide recommendations … on the establishment of a shared service to facilitate data sharing, enable data linkage, and develop privacy enhancing techniques." As of January 2018, H.R. 4174 had passed the House, but had yet to be taken up by the Senate.

matches the files using the PIK. Analysis is also conducted on the server. In some cases, remote access to the server is allowed; in other cases, analysts must work at a designated and secure location. Files are removed from that server only under pre-arranged and limited conditions—in particular, aggregate tabulations only, no individual-level data, and no tabulations for small cells.

This is the variant that DOL's Chief Evaluation Office and the Office of Planning, Research, and Evaluation (OPRE) within ACF use for analysis of NDNH data for random assignment studies. The study team collects SSNs and other information at application. Those SSNs are passed to ACF's Office of Child Support Enforcement, along with other information from the study, in a "pass-through file." OCSE replaces each SSN with a PIK on both the pass-through file and the NDNH data. Both data files are returned to the study team on the limited-access server (to which remote access is possible).[100] The study team matches the data based on the PIK, does the analysis, and leaves the aggregate results for disclosure review. Appropriate disclosure review is done by the appropriate party (usually someone related to the limited-access server) and the aggregate results are return to the study. Individual-level data are never passed outside the limited-access server to the study.

This also is the variant that the Census Bureau uses for analysts who want to match external data to Census Bureau surveys. Examples include Davern, Klerman, Baugh, Call, & Greenberg (2009) and Klerman, Davern, Call, Lynch, Ringel (2009). The study team has SSNs for its data. That external data with SSNs is passed to Census. Census replaces the SSNs with PIKs and matches the external data to its survey data. Analysis proceeds on Census's limited-access servers (e.g., at Census Research Data Centers). As an added level of security, Census requires that those working with the data—even once SSNs are replaced by PIKs—obtain Special Sworn Status. Doing so requires a background check and explicit promises not to release information subject to additional criminal penalties. In addition, access is only at a secure facility (e.g., Census Bureau headquarters or Census Research Data Centers). Aggregate results are left for Census Bureau disclosure review. Census staff do appropriate disclosure review, and then aggregate results are released to the study. Again, individual-level data are never passed outside the limited access server to the study.[101,102]

This variant will work for the VETS study even if the study has access to SSNs for any of the data sets. This variant would also work if the study ran its own survey and wished to match the results to extant data—administrative data or other survey data. The study would pass data collected in its own survey back into the safe harbor.

For most purposes, analysis using PIKs on a limited-access server is more than sufficient. It clearly involves inconvenience and higher costs for the study team. That inconvenience and the higher costs will be greater the more difficult is access to the limited-access server, the more congested is that server, and the higher are the costs for using the server.

- *Variant 3. Third Party Matches Data and Performs Analysis.* Under this variant used with especially highly protected data, the evaluation team never sees the merged data. Instead, the evaluation team arranges for data custodians (perhaps the study team itself) to submit their files with

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[100] Both DOL/CEO and ACF/OPRE maintain such limited-access servers for this purpose.

[101] See https://census.gov/about/adrm/fsrdc/locations.html for a list of the 29 current Census Research data centers.

[102] This appears to be the specific variant that the Commission on Evidence-Based Policymaking (2017) has in mind.

SSNs to the safe harbor. The third party replaces each SSN with a PIK, matches based on that PIK. The study submits software programs, which are run by the staff of the safe harbor on its server. Aggregate results are reviewed for disclosure by the safe harbor and then released to the study.

This is the variant that SSA uses for access to SSA earnings data. It is extremely cumbersome. Debugging programs at arm's length is challenging, especially because time between runs is in practice often days or longer. RAND has used this process for its analyses of earnings of veterans (Loughran, Klerman, & Martin, 2006; Martorell et al., 2008; Loughran et al., 2011).

This variant will work for the VETS study even if the study has access to SSNs for any of the data sets.

In summary, direct access to data is easier on the project. In contrast, access through a safe harbor increases costs and lengthens time lines. That said, several safe harbors—NDNH, SSA, Census—have well established protocols and long records of working with researchers. The requirement of using a safe harbor is clearly manageable.

7.2   Allowable Uses under the Privacy Act

Any data sharing approach must satisfy regulations under the Privacy Act of 1974 as amended (codified in 5 U.S.C., Section 522a) governs Federal agencies' collection, storage, and use of personally identifiable information (PII) on individual U.S. citizens and residents.[103,104] The Privacy Act specifies that agencies can only use and disclose PII in certain ways.

Agencies must publish and update a System of Records Notice (SORN) in the Federal Register for each data system. These SORNs serve to advise members of the public of the routine uses under which records of each data system may be disclosed outside the agency.

Any such disclosure outside the agency must be allowed by one of the following:

- A "routine use" specified in the SORN [5 U.S.C., Section 522a (b)],

- A specific exception listed in the Privacy Act [5 U.S.C., Section 522a (b)], the most relevant of which are

    o *(4) to the Bureau of the Census for purposes of planning or carrying out a census or survey or related activity pursuant to the provisions of title 13*

    o *(5) to a recipient who has provided the agency with advance adequate written assurance that the record will be used solely as a statistical research or reporting record, and the record is to be transferred in a form that is not individually identifiable* [emphasis added]

- Prior written consent of each individual whose information is recorded [5 U.S.C., Section 522a (b)],

- Another specific law allowing the disclosure.

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[103] Source: https://www.gpo.gov/fdsys/pkg/USCODE-2012-title5/pdf/USCODE-2012-title5-partI-chap5-subchapII-sec552a.pdf

[104] FYI for you, if you care: the current administration has narrowed protection to citizens and lawfully admitted residents only. See e.g., https://www.pindrop.com/blog/executive-order-excludes-non-us-persons-from-privacy-act-protections/

The Privacy Act also restricts agencies from certain activities that match data in multiple sources, but it contains an exception for matching to support research or statistical projects. Specifically, aside from the more general limitations on disclosure stated above, the Privacy Act does not further restrict:

> *matches performed to support any research or statistical project, the specific data of which may not be used to make decisions concerning the rights, benefits, or privileges of specific individuals [5 U.S.C., Section 522a (a)(8)(B)(ii)].*

Several of the exemptions are of limited or no value for this sort of research study. Obtaining written consent from every individual in a large data system is generally infeasible. Exception (5) above does not allow transfer of identifiable records, which are necessary to match across data systems for analysis of program usage and outcomes. Therefore, the routine uses specified in SORNs are extremely important to enable such data matching and analysis.

The Department of Defense has published SORNs for its personnel data systems that allow disclosure for studies that address the health and well-being of service members, families, and veterans. Specifically, Routine Use 22 of its SORN provides for disclosure:[105]

> *To Federal and quasi Federal agencies, territorial, state and local governments, and contractors and grantees for the purpose of supporting research studies concerned with the health and well-being of active duty, reserve, and retired uniformed service personnel or veterans, to include family members. DMDC will disclose information from this system of records for research purposes when DMDC:*
>
> *a. Has determined that the use or disclosure does not violate legal or policy limitations under which the record was provided, collected, or obtained;*
>
> *b. has determined that the research purpose (1) cannot be reasonably accomplished unless the record is provided in individually identifiable form, and (2) warrants the risk to the privacy of the individual that additional exposure of the record might bring;*
>
> *c. has required the recipient to (1) establish reasonable administrative, technical, and physical safeguards to prevent unauthorized use or disclosure of the record, and (2) remove or destroy the information that identifies the individual at the earliest time at which removal or destruction can be accomplished consistent with the purpose of the research project, unless the recipient has presented adequate justification of a research or health nature for retaining such information, and (3) make no further use or disclosure of the record except (A) in emergency circumstances affecting the health or safety of any individual, (B) for use in another research project, under these same conditions, and with written authorization of the Department, (C) for disclosure to a properly identified person for the purpose of an audit related to the research project, if information that would enable research subjects to be identified is removed or destroyed at the earliest opportunity consistent with the purpose of the audit, or (D) when required by law;*
>
> *d. has secured a written statement attesting to the recipients' understanding of, and willingness to abide by these provisions.*

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[105] http://dpcld.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/627618/dmdc-02-dod/

Unfortunately, other agencies have generally not provided such routine uses for research in their SORNs, or they limit them to projects that benefit the agency's specific mission. For example, the Social Security Administration (SSA) SORN for its Master Beneficiary Record (record of earnings) provides Routine Use 26: [106]

> *To contractors and other Federal agencies, as necessary, for the purpose of assisting the Social Security Administration (SSA) in the efficient administration of its programs. We will disclose information under the routine use only in situations in which SSA may enter into a contractual or similar agreement with a third party to assist in accomplishing an agency function relating to this system of records.*

Under this routine use, the proposed research must benefit SSA. Routine Use 36 [lengthy, not quoted] also allows disclosure to government agencies for some research purposes if the research cannot be accomplished without access to individually-identified records and is important to the Social Security program or its beneficiaries.

7.3   The Existing RAND Data Match

An existing, ongoing RAND data match includes much—but not all—of the data required for the study.[107] Exhibit 7.2 compares content of the RAND data match to the data that appear to be required for the VETS study. A large portion of the required data—covering lists of veterans, and their employment and earnings outcomes—is included in a database begun by Klerman and others while at RAND (in **green**) that continues to be used there by Goldman and others. DOL workforce data (in **blue**) contain key information on workforce services received. Additional administrative data, extant survey data, or data from a new study-specific survey might also be added (in **red**).

Specifically, the RAND database, which is updated on an ongoing basis,[108] is built as follows[109]:

- The RAND database begins by merging DoD MEPCOM data—on everyone who ever applied to enlist—discussed in Section 5.2.1. Before providing the data to RAND, DMDC replaces SSNs with PIKs that are common to all DMDC files. This PIK is then used by RAND staff to merge across the DMDC data files.

- The National Student Clearinghouse provides individual-level data on schooling. Specifically, NSC provides data with SSNs to DMDC. DMDC replaces the SSNs with PIKs and then passes the data to RAND. RAND matches the data to its existing files using the PIK.

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[106] https://www.ssa.gov/privacy/sorn/60-0090.pdf

[107] Several RAND studies for the DoD as a whole and for the Army have used this database to study effects on the earnings of veterans (e.g., Loughran et al., 2011; Martorell et al., 2013) and on military spouses (e.g., Burke & Miller, 2016). Current projects in this line of research include examination of the retirement savings and income of veterans and the relationship between military occupation and post-separation earnings.

[108] Typically on a yearly basis.

[109] This discussion is slightly simplified; some details are suppressed for clarify of exposition.

Exhibit 7.2. RAND Data Match's Coverage of Data Required by Study
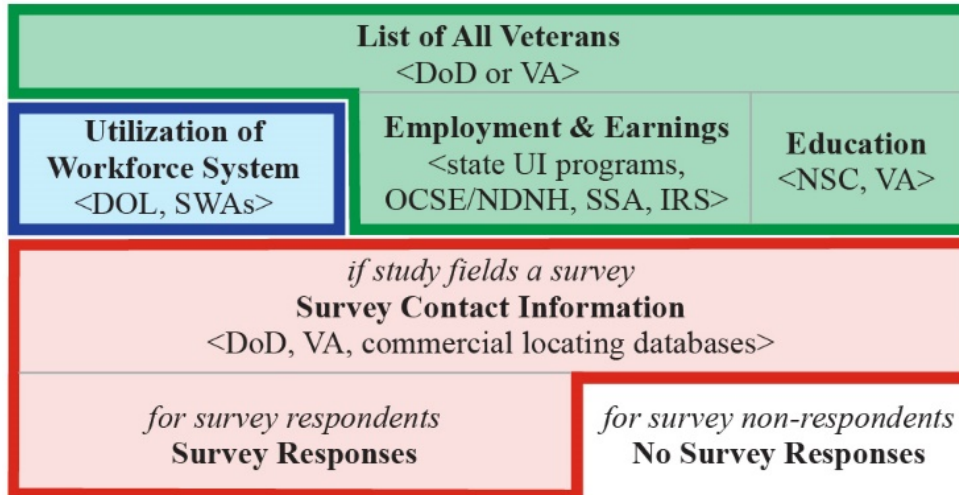
Key: DoD/Department of Defense. DOL /Department of Labor. SWAs/State Workforce Agencies, IRS/Internal Revenue Service. NDNH/National Directory of New Hires. NSC/National Student Clearinghouse. OCSE/Office of Child Support Enforcement. SSA/Social Security Administration. VA/Department of Veterans Affairs.

Note: Possible sources of administrative data in <brackets>. Green indicates database created by Klerman at RAND (and still in use there). Blue indicates administrative data to be added to minimally address DOL RQs. Red indicates additional administrative data needed to conduct a new study-specific survey and data it would collect.

- The VA provides individual-level data on use of veterans' education benefits using an equivalent scheme.

- SSA—indirectly—provides annual earnings data. RAND prepares a "match file" with the non-SSA data and PIKs. RAND passes that match file to SSA, and DMDC separately provides SSA with a crosswalk from PIKs to SSNs. SSA matches the RAND match file to its earnings data by SSN, creating a new analysis file for everyone in the original RAND match file (i.e., everyone who ever enlisted) in which the true SSNs are replaced with SSA's PIKs (different from DMDC's PIKs). RAND analysts then submit analytic programs to SSA that transform the data and run the analyses. SSA staff run the RAND-supplied software programs (the third and most restrictive strategy discussed in Section 7.1). Program output is reviewed by SSA staff to verify that no sensitive information is revealed (apparently, primarily minimum cell counts), and then returned to RAND analysts for write-up.

- Census data provide other information. RAND prepares a match file with the non-Census data and PIKs. RAND passes that match file to a federal statistical Research Data Center (RDC), and DMDC separately provides the RDC with a crosswalk from PIKs to SSNs. Census staff replace the SSNs in the crosswalk with the Census PIKs (different from both DMDC and SSA PIKs). RAND analysts with Special Sworn Status (discussed below) then travel to the RDC to match the DMDC to Census data using the crosswalk between DMDC and Census PIKs. The RAND analysts then develop and run their analytic programs. Program output is reviewed by Census staff to verify that no sensitive information is revealed and only information explicitly proposed in the Census-approved project description is released to RAND analysts for write-up.

This data construction approach provides a potential starting model for this study. Several caveats should be noted. First, it is not clear that the various data stewards would allow this study access to these data.

For example, even RAND's access has recently been constricted. Second, this approach does not appear to allow creation of a file with both SSA earnings data and Census survey data. Third, this approach does not provide identifiers—name, gender, date of birth. It is therefore not possible to use these data to field a survey. Even when those identifiers are provided so contact is possible, the data steward might deny the right to contact those veterans in the data file. We return to using extant data to support a new study-specific survey in Section 7.5.

Similarly, the U.S. Army's Office of Economic and Manpower Analysis (OEMA) has approval to match Army data to SSA earnings data for several studies of mutual interest. OEMA has not yet provided data to SSA; analysis has not yet begun.

7.4   Matching Extant Data at the Census Bureau

For three complementary reasons, matching extant data at the Census Bureau is a promising strategy. The first and obvious reason is that the Census Bureau controls the ACS. As noted in Section 5.2, the ACS is big enough to be of use for this study. Census never releases identified data. It does, however, merge data within its systems and make that data available for analysis—under limited circumstance (see Census Bureau, 2016). (We return to the limited circumstances shortly).

The second and less obvious reason why matching extant data at the Census Bureau is a promising strategy is that the Census Bureau has special statutory authority to merge extant data with a lower threshold for informed consent (Census Bureau, n.d.). The report of the Commission on Evidence-Based Policymaking summarizes the situation as follows (2017, p. 26):

> *Similarly, the Privacy Act does not provide the authority to collect data, but it does set requirements regarding how those data may be disclosed. Specifically, the Privacy Act requires public and individual notices about data held in government systems and limits disclosure of these data without consent. This includes restricting the secondary uses of data without consent unless one of a limited number of exceptions applies. For example, the Congress exempted from individual consent requirements data provided by another agency to the U.S. Census Bureau for the purposes of planning or carrying out a census or survey.*

The Commission report (p. 43) explains that exemption as follows:

> *With the Census Bureau exemption, the Congress demonstrated its belief that the provision of administrative data under strong confidentiality protections for exclusively statistical purposes was safe enough to exempt it from the Privacy Act's consent requirements.*

This statutory exemption implies that some matches of exclusively non-Census Bureau extant data may be possible at the Census Bureau—even though they would be illegal elsewhere.[110]

Third, as we discuss later in this section, the Census Bureau is already doing several closely related matches. Thus, the Census Bureau also has physical possession of the much of the data and software programs to process it. In addition, there is already implicit agreement that the Census Bureau's data protection procedures are sufficient.

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[110]   It should be noted that the Commission explicitly recommends extending this exemption to most statistical analyses. When and if such legislation passes, the situation would change dramatically.

That the Census Bureau physically has the data is useful, but not sufficient. The Census Bureau may only perform such matches when they advance the goals of the Census. Formally, this requirement is known as a "Title 13 need" (where Title 13 is the authorizing statute for the Bureau of the Census). In practice, Census applies a broad definition of Title 13 need. Within this context, however, Census must be convinced that it will benefit from the effort. DOL's statutory requirement to conduct a study does not in and of itself constitute a need under Title 13. This leaves the Census Bureau in a position to shape the terms of any agreement to ensure compliance with its interpretation of a Title 13 need.[111]

The Commission on Evidence-Based Policymaking (2017, p. 43) noted that similar provisions apply to other data custodians. In particular, their authorizing statutes allow use of their administrative data only to improve the operation of *their programs*. It is not clear that they have statutory authority to allow use of their data—for statistical purposes—in support of the operation of a different agency. That is a challenge for this study because it seeks non-DOL data to improve the operation of DOL programs. A statutory requirement for a study might not be sufficient to address this challenge.

Assuming these barriers can be overcome, there are at least three inter-related routes through which the study might match data—extant external data, the ACS, a new study-specific survey—at the Census Bureau.

1. *Center for Administrative Records Research and Applications (CARRA).* CARRA is the Census Bureau's internal administrative data effort, often in collaboration with other federal agencies (Census Bureau, n.d.). Studies through CARRA have relatively fast start-up times (perhaps as short as 3 months), but require a Census Bureau staff person as partner and co-author. CARRA staff indicated that resources are so tight that it is unlikely that CARRA would collaborate on this study. In addition, projects through CARRA require both disclosure review and Census Bureau review (e.g., reports are subject to Census Bureau review of methods and cannot criticize the Census Bureau).

2. *Evidence-Building Staff.* The Census Bureau is in the early stages of developing a new method of access to administrative data called the "Evidence-Building Staff." It is possible that CARRA's requirement for a Census employee co-author might not apply, although details and policies are still being worked out. As with CARRA, studies through the Evidence-Building Staff require both disclosure review and Census Bureau review (e.g., reports are subject to Census Bureau review of methods and cannot criticize the Census Bureau).

3. *Federal Statistical Research Data Centers.* In collaboration with other federal agencies and external groups (e.g., universities), the Census Bureau maintains an extramural program in which non-Census Bureau staff can get access to Census Bureau survey data and administrative data.[112] No Census Bureau staff partner or co-author is required; however, project staff accessing data must have Special Sworn Status (Census Bureau, 2009, p. 2). Obtaining that status adds project time, unless team members have that status already. Access is only on a secure server in a secure RDC; that is, a slightly more limited version of the second approach discussed in Section 7.1. Results are subject to disclosure review, but not Census Bureau clearance (i.e., the Census Bureau does not review methods

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[111] See the implicit critique of existing statistical practice in the Commission report (2017, p. 41; emphasis added): "The [National Secure Data Service] also must be organized in such a way as to prioritize support for evidence building across government, *rather than support specific to any one department, as is the case for existing [Principal Statistical Agencies]*."

[112] See here for a broad overview: https://census.gov/about/adrm/fsrdc/about/secure_rdc.html.

and reports may criticize the Census Bureau). Only outputs specifically approved in advance by Census may be submitted for disclosure review. The RDC facilities are intended to produce model-based outputs (e.g., regression coefficients and standard errors) and do not support the release of significant tabular outputs or voluminous descriptive statistics. There is an application process and a long review process—often a year or more.

Each of these access methods involves costs. The Census Bureau charges both for PIK'ing data and then for a "seat" in a secure facility. As an extremely rough estimate, start-up costs are in the range of $100,000 per year. Annual costs for a seat are slightly lower.

Regarding Census access to key pieces of data:

- *List of Veterans.* Our conversations with Census Bureau representatives indicate that, from both DoD and VA, the Census Bureau currently has access to an imperfect list of veterans and expects to soon receive an updated and cleaned file. However, access to those data requires VA approval.

- *Earnings Data*. The Census Bureau has access to two sets of administrative data on earnings:

  - The Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) effort has state UI earnings data. However, access to those data for external users requires permissions equivalent to accessing the data directly from the states. In practice, a study is only likely to get access to about half of the states; the other states will refuse access. Once permission is obtained, working with the data at Census is easier. Consistent, cleaned files are already there. Furthermore, it appears that external studies with an internal Census co-author may be treated as internal studies for this purpose, such that those studies would have access to all state UI earnings data.

  - The Census Bureau has access to IRS tax data. However, again, access to those tax data are available only with the permission of IRS. Such permission usually requires a compelling benefit to the IRS. In practice, it is unclear whether the VETS study would satisfy that requirement.

- *Workforce System Utilization Data.* The Census Bureau does not currently appear to have access to any DOL workforce system utilization data. Census interviewees indicated that an arrangement that allowed Census to receive such data from DOL may be of value to the Bureau, though they have limited resources to take on new projects.

In summary, matching at Census might be a feasible safe harbor strategy. Census is a well-respected data steward and, in addition, has internal copies of some of the data of interest. Finally, Census controls the ACS. However, access to extant administrative data—even administrative data that Census already has physical possession of—will often require explicit permission from the original data custodians. As noted in Chapter 5, gaining permission may be difficult. We return to that issue in the final section of this chapter.

We have identified several studies of veterans' issues at Census that provide insight into what might be possible for statutorily mandated study. The status of those studies varies.

- *Veteran Records and ACS Linkage Study.* The VA and the CARRA at the Census Bureau have a growing collaboration to better understand Census and VA data—in particular, the overlap (or lack of overlap) of individuals classified as veterans in the data systems of the two organizations.

- *Outcomes under the Post-9/11 GI Bill Study.* American Institutes for Research and the organization Veterans Education Success[113] are merging VA data with other data to analyze veterans' use of the Post-9/11 GI Bill and subsequent labor market outcomes. Permission has already been obtained to link a list of Army veterans to ACS data. The project soon expects to get permission to match to a DoD list of all veterans (not only Army veterans) and their characteristics at enlistment, NSC data on college attendance and completion, and LEHD data on earnings for selected states. Negotiations are under way to also get access to VA data on use of VA education benefits and disability status, and IRS data on earnings and income.

- *HUD-VA Study.* HUD and VA are collaborating with Census on a study of veterans' use of HUD programs. Specifically, the Census Bureau is matching HUD tenant records with VA data to get estimates of veterans receiving assistance from HUD.

- *VA/Census Match on Disabled Veterans.* VA and several outside researchers are discussing with Census to match, at Census, VA data, IRS earnings data, SSA benefit data, and Census survey data (ACS, CPS, Survey of Income and Program Participation, and LEHD). The resulting database would be used to understand the experiences of disabled veterans, particular Total Disability Rating Based on Individual Employability status.

- *West Point Match.* OEMA is working with Census (both LEHD and CARRA) on multiple studies of veterans' labor market outcomes, including studies of (1) the returns to military service; (2) the impact of small business training in TAP; (3) long-term effects on children of parental absence due to deployment; and (4) cost of military mobility on spousal earnings. OEMA supplied data on military careers; access to LEHD UI data has been obtained; access to IRS earnings data is under negotiation. All studies have Census Bureau co-authors.

7.5   Veterans' Data Exchange Initiative

The Veterans' Data Exchange Initiative (VDEI) is an existing data-sharing arrangement that could provide a list of veterans for a sampling frame. Under this arrangement, DoD regularly ships to DOL/VETS information from DoD's DD Form 2648 ("Service Member Pre-Separation/Transition Counseling and Career Readiness Standards Eform for Service members Separating, Retiring, or Released from Active Duty"; see Appendix A). DoD uses this form to begin the process of pre-separation counseling. The form states that the information is controlled by DoD and will be released to the VA to administer benefits. The form includes a check box allowing provision of the information to federal agencies for additional services. Although DOL is a TAP partner, the information from DD Form 2648 is not automatically provided to DOL (and provision is opt in, not opt out). Crucially for our purposes, the form *does* include contact information: SSN, post-separation email, and post-separation telephone number and address.

DoD has been using this form since 2012; DOL/VETS has been receiving the data under VDEI since November 2016. DOL/VETS receives all of the data on the form, but its ability to use these data is extremely limited. The Memorandum of Understanding:

- Allows DOL/VETS to use the data to email veterans (who have checked the box authorizing sharing of their data) about AJC and workforce services available in the locality to which they are returning.

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[113]   On Veterans Education Success, see https://veteranseducationsuccess.org/senate-investigation/.

- Prohibits DOL/VETS from sharing data with state agencies including local WDBs.

- Prohibits DOL/VETS from sharing the data beyond DOL/CEO. It is unclear whether either DOL agency is permitted to provide the data to an agent—e.g., a contractor for analysis.

- Prohibits using the information (e.g., name, SSN) to match the DD Form 2648 data to other data— even for statistical purposes.

In order for a study to use VDEI data, DoD would need to agree to modify this agreement.

7.6   Strategies for Matching for a Study-Specific Survey

For several related reasons, matching is more complicated for data collected through a study-specific survey. We consider three cases: (1) a survey based on unrestricted access to a sampling frame with SSNs; (2) a survey that must match data to generate a frame; (3) an ABS (or RDD) survey that must collect names and SSNs in order to match.

- *Case 1: Unrestricted Access to a Frame with SSNs.* When the survey has unrestricted access to a frame with SSNs, the second and third variants of safe harbor matching discussed in Section 7.1 are feasible for matching a study-specific survey to extant data. The study would use the administrative data as a frame to conduct the survey. Survey responses with SSNs are passed into the safe harbor, and analysis proceeds as described in Section 7.1. Some safe harbors (e.g., Census) may even be able to match based on data other than on an SSN (e.g., on name and date of birth), though match rates may be lower. In practice, we think this case is unlikely.

- *Case 2: Matched Data to Generate a Frame.* Some data custodians may be willing to release SSNs, but may not be willing to allow the study to use the information in their data files to contact veterans in those data files. Clearly, a survey is more difficult.

  In the more complicated safe harbor matching scenario depicted in Exhibit 7.1, if the data custodian will not release SSNs, it certainly will not release names or allow contacting those in its database. Furthermore, because conducting a survey requires having names of those on the file and contacting them, the data cannot stay in the safe harbor. The safe harbor strategies will not address the issues.

  A variant may be possible. The study could contract with the safe harbor third party to conduct the survey—using the limited-access data it controls and will not release. Survey data are brought into the safe harbor, SSNs are replaced with PIKs, and all identifying information is removed. Analysis then proceeds according to one of the variants described in Section 7.1.2. Under some conditions the Census Bureau might conduct such a survey. Alternatively, DMDC, which controls the DoD personnel data, has a survey arm and might conduct such a survey.

The situation may not be as bleak as this discussion has suggested. There is precedent for DoD sharing administrative data with non-DoD agencies for use as a frame for surveys. For the 2010 National Survey of Veterans, DoD provided DEERS data (see Section 5.2) allowing Westat to use list sampling methods—rather than ABS—for active duty service members and their spouses, as well as recently deactivated reservists. Given our interest in also matching to administrative data, this study would benefit from a full list of veterans—even if available address information is not recent (e.g., address at enlistment, address immediately after discharge). Even address data that is several years old is likely to yield some benefit for locating.

- *Case 3: An ABS (or RDD) Survey.* Different issues are raised by a survey using address-based sampling or random digit dialing to generate its own frame. This approach does not require any

individual-level external data—no names and no SSNs. The advantage of a study-specific survey is that it can ask any questions; however, respondents need not answer. In particular, matching back to extant data will require SSNs. It might even be sufficient to collect only name and date of birth and then to use that information to impute SSN.

It is far from clear that this strategy is feasible. Given recent data breaches and concern about identity theft, it seems likely that—even among those who would respond to a survey—a substantial fraction would refuse to provide an SSN. Similarly, a substantial fraction seem likely to refuse to provide name and date of birth and permission to merge with administrative data.

- This analysis suggests that for an ABS or RDD survey, samples of data matched to extant data will be small and unrepresentative of the broader population of interest. Concerns about sample size for analyses of extant data arise for two reasons. First, even moderate costs per complete combined with the need to screen very large numbers of households in order to identify the rare households using intensive workforce services (see Section 9.3) imply only small numbers of survey completes among veterans and especially among veterans using intensive workforce services. Second, only a fraction of survey respondents will provide an SSN or name and date of birth and permission to impute SSN.

This discussion has daunting implications. Holding aside concerns about privacy and data access, an attractive design would combine extant data with a study-specific survey. In particular, such a design might use administrative data to build a frame, collect study-specific survey data, and then merge those study-specific survey data with the frame and other extant data.

However, ignoring concerns about privacy and data access is not possible. With respect to Case 1, obtaining appropriate access to a frame with SSNs and permission to contact may require changes to statute or regulation (see Section 10.1). In the absence of such access, Case 1 is impossible.

With respect to Case 2, it is clear that the Census Bureau has the requisite survey capabilities.

- The National Science Foundation's National Survey of College Graduates used the ACS as a frame.[114] That is the only successful example of using the ACS as a frame for another survey.

- Census Bureau staff report that an attempt to use the ACS as a frame for a survey of Hawaiians and other Asian and Pacific Islanders collapsed. This was because at re-contact, not enough of the households identified as having a member of the population of interest actually did. The problem appears to have been some combination of moving (and changes in responses to the race/ethnicity question).[115]

- The VA is in early discussions with the Census Bureau about using the ACS as a frame for a follow-on to the 2010 National Survey of Veterans.

The timeline for the Case 2 strategy would be quite long. Census Bureau staff report that approval, if successful, would take several years.

DMDC also has survey capabilities, but it usually uses low-intensity field methods. For example, DMDC sends the survey out by mail or email, and the respondent completes the survey either on paper (and mails

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[114] See https://www.nsf.gov/statistics/srvygrads/overview.htm.

[115] The ACS samples addresses. It does not collect detailed contact information. If a household moves, it is much harder for Census to find the household.

back) or online (any combination of those is possible). DMDC conducts no phone survey administration or field locating.

With respect to Case 3, the challenges of getting (or imputing) SSNs and the permission to contact the identified individuals seem so daunting as to—in practice—rule out an approach that uses an ABS sample to link back to administrative data.

7.7 Potential Next Steps to Develop Solutions to the Data Challenge

The discussion in this chapter highlights the key challenge in designing a study is likely to be access to three key pieces of information: (1) a list of veterans and their experience in the military; (2) a list of veterans using workforce services, with details on utilization; and (3) earnings. DOL does not control data that would provide any of these three key pieces of information, as the *Final Report of the Commission on Evidence Based Policy* (2017) emphasizes, current statute and interpretation of those statutes presents major obstacles to obtaining and, where necessary merging them.

Whether our understanding and this interpretation are correct is an open issue. It appears that—within the Census Bureau's restricted environment—the *Outcomes under the Post-9/11 GI Bill Study* will get access to DoD data on veterans. That study provides a precedent for this study. Unlike the GI Bill study, this study has the sponsorship of a federal agency (DOL) and is in response to a congressional mandate. Given recent DOL experience, access to quarterly earnings data through the NDNH seems likely. Further discussions between DOL and the custodians of data on veterans and earnings would be needed to determine if data custodians would share data for the study—either with identifiers or in some safe harbor without identifiers.

If the custodians of the list of veterans and the workforce data were willing to share data with a safe harbor, further discussions would be required with custodians of earnings data like OCSE/NDNH and SSA to determine if they could serve as that safe harbor.

Regarding the need to obtain workforce data with identifiers, DOL is prohibited from either creating a national dataset itself or requiring states to provide identified workforce data to a contractor. The alternative for a study is to request identified workforce data from states (or select states). In that instance, we might expect some or even many states to refuse. Finally, note that the previous discussion implicitly focused on data for administrative data analyses. For those purposes, access to the data in a safe harbor would probably be sufficient. Some attractive designs would also include a study-specific survey. As we discuss in more detail in the next two chapters, access to administrative data on veterans and their use of the workforce system would substantially cut the cost of a survey. The potential savings are huge. Access to a list of veterans would cut costs by very roughly 90 percent (e.g., a $100-million survey would cost $10 million). Access to a list of veterans and their use of workforce services would cut survey field costs by very roughly 99 percent or more (e.g., a $100-million survey would cost less than $1 million). In short, access to appropriate administrative data to construct a sampling frame may determine whether a national study-specific survey is cost-feasible.

However, sufficient access to the needed administrative data—a list of veterans and their use of workforce services—is likely to be especially difficult to obtain. Access through a safe harbor is not sufficient. Such access through a safe harbor includes no identifiers. As a result, such access is of nearly no use for survey contact. Even if access to identifiers were gained, such access often does not allow contacting the individuals. Again, further investigation into the likely terms of access is indicated.

8. Methods for Implementation, Impact, and Cost-Benefit Studies

The preceding chapters have discussed access to the individual-level data necessary to answer the research questions. This chapter discusses methods for conducting analyses of implementation, impact, and cost-benefit, once the appropriate data on individuals have been obtained.

Section 8.1 considers methods for gathering detail for an implementation study examining how DOL's veteran-serving employment and training programs are implemented. RQ 1 (see Exhibit 6.1) asks:

> *What are the types and packages of services or policy approaches provided under American Job Center's job counseling, training, and placement service for veterans?*

Addressing this question requires an implementation study to provide details on such issues as eligibility requirements and exclusions, mix of and delivery methods for DOL-funded employment services to veterans, and integration with AJC and other community resources.

The methods required to address implementation question RQ 1 appear to be standard. Section 8.1 considers implementation analyses generally, with particular focus on obtaining data on patterns of service provision through site visits and a closed-form site survey. A survey would permit collection of nationwide data from states, local WDBs, and potentially AJCs—data required in order for the implementation study to support exploratory analyses of how different components and approaches affect veterans' employment outcomes as indicated in RQ 2:

> *What key components or approaches are successful or contribute to the success of job counseling, training, and placement service for veterans?*

Section 8.2 considers general issues in estimation of causal impact indicated by RQ 2. DOL would normally estimate causal impact through a random assignment study; however, agency representatives have indicated that this is not an option to consider.

Section 8.3 reviews alternatives to random assignment including some form of matching, and as a fallback, estimates of "association." We note that estimates of association cannot be interpreted as estimates of causal impact. Any study using that approach would need to clearly and forcefully make that point. Furthermore, a study of association could not support a cost-benefit analysis (discussed next).

Section 8.4 describes methods to answer RQ 3:

> *What are the costs of job counseling, training, and placement service for veterans? Do estimates of benefits of providing services or implementing policy outweigh the costs of those initiatives?*

A proper cost-benefit analysis requires strong estimates of benefits (i.e., estimates of causal impact). Those issues were considered in Sections 8.2 and 8.3. Section 8.4 therefore focuses on methods for estimating costs and feeding estimates of costs and benefits into a cost-benefit analysis.

8.1 Approaches to Answering Implementation Research Questions

Other sections of this report extensively discuss distinguishing veterans by their utilization, and measuring their characteristics and outcomes. This section considers describing the programs themselves; what is often called "implementation analysis." This section provides a brief discussion of appropriate methods. The *EDOR* discusses these issues in greater depth.

8.1.1 Approaches to Describe Variation in Service Delivery among AJCs

Descriptions of service delivery—and variation in that delivery—contribute to broader learning efforts in a number of ways. Any evaluation effort requires a clear understanding of what exactly the intervention is that is being evaluated. For evaluations of outcomes and impact, this understanding can be useful at both the design stage and for interpreting results. Service delivery can vary substantially across AJCs, [116] and at the design stage understanding variation in service delivery can help identify approaches or components that may be interesting to test for impacts. Understanding exactly what services were delivered, and variation in that service delivery, can also be valuable for interpreting observed outcomes and impacts. AJCs also work under budget constraints, and different service delivery approaches also incur different costs per customer served—and involve tradeoffs between the extent of services provided and the number of individuals that can be served. For each of those purposes, obtaining data from perhaps a few dozen AJCs, each of which serves a substantial number of veterans, in different states and local WDBs would likely be sufficient to get a reasonable sense for the type of variation in approaches that exist.

There is some existing literature on service delivery in AJCs—both generally and to veterans in particular—that could be used as starting point to understand service delivery. However even the most recent and forthcoming major descriptive studies of services in AJCs pre-dates the transition from WIA to WIOA, as well as important changes in guidance regarding SBEs. [117] Thus, though of some value, it cannot be relied on as a replacement for primary data collection. Ideally such a data collection would involve some combination of site visits to speak with staff and observe processes, together with analyses administrative data on service provision.

However, for the purposes of supporting some matching-based quasi-experimental impact analysis designs discussed in Section 8.2, more comprehensive data are required. A leading set of causal questions concern the extent to which differences in program delivery induce changes in workforce outcomes for veterans. The data issues considered in Chapters 5 through 7 would generate the outcome data for such

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[116] This can result from differences across states in the directives of the state workforce agencies to local WDBs, local WDBs' own policies, or the management of individual AJCs within a local WDB. Local WDBs have substantial latitude in designing service delivery systems, including designing the processes and emphases that its AJCs are to follow. Within a local WDB area, AJCs also vary (by design) in staffing and the range of services that are available, with some AJCs offering a more comprehensive set of services than others. For example, smaller offices may not have a DVOP specialist or may only have one stationed there part-time. In some cases multiple AJCs within a local WDB area may be operated by different contractors—which can lead to further differences in service delivery within among AJCs within a local WDB area.

[117] The DOL-funded *WIA Gold Standard Evaluation* included an implementation study that involved two-rounds of site visits to multiple AJCs in 28 local areas (D'Amico et al., 2015). Those two site visit rounds occurred in 2012 and 2013, respectively, prior to WIOA authorization. The main study also did not examine JVSG services. A veterans supplement to the WIA evaluation (Rosenberg et al., 2015) did examine the range of services to veterans in AJCs. Data for that study were collected during 2013 site visits to at least one AJC in the 28 local areas, as well as discussions with state veterans coordinators (who administer JVSG grants) in 18 states.

When published, results from the recently completed *Institutional Analysis of American Jobs Centers* will provide more updated information on service provision in AJCs. The study's data collection relied primarily on site visits to 40 AJCs, conducted in 2016. Although the study's data collection occurred after WIOA authorization, program guidance had not yet been fully developed and implemented, so AJCs were still largely operating under WIA-era procedures. Apart from not capturing service provision after transition to WIOA, the study also did not focus on services provided to veterans.

studies. The missing piece is then the program variation covering all AJCs in the study—corresponding to every veteran. That design would require information on implementation at every WDB or AJC.[118] Either workforce system data or a study-specific survey of WDBs or AJCs could provide the information on program variation.

Exhibit 8.1 lists the potential data sources for either purely descriptive study of a subset of AJCs or a nationwide study to support a quasi-experimental impact analysis. It also lists the content, virtues, and limitations of each source, relevant to meeting the research objectives described above.

8.1.2   Understanding Veterans' Perceptions of AJC Services

The statute specified that the study collect data on whether veterans served by AJCs believed that services provided helped the veteran become employed. Customer perceptions can be important to understand for multiple reasons. They provide context for understanding patterns of participation, and can also help identify program elements that are working well, and places for improvement to occur. Consistent with common practice in the marketing and product design worlds, such feedback is key both to attract customers and to make sure that services and processes are organized in ways that are most readily usable and best meet their needs.

Little research exists on customer perceptions of AJC services. Past research has focused on priority of service (POS), with studies finding find that awareness of POS among veterans is not high—particularly among veterans who are first time users of AJCs or who are not recently separated from the military (Boraas, Roemer, and Bodenlos 2013; Rosenberg at al. 2015; Trutko and Barnow 2010). But we know very little about how helpful veterans (or any AJC customers) believe the services they received from AJCs were.

Data on perceptions could be gathered in at least three ways:

1. A study could field a separate survey effort to collect information on veterans' perceptions. Viewing that effort as a customer satisfaction survey, it would be natural to survey a sample of those using workforce services. Selected AJCs might provide a list of recent clients who could then be surveyed by mail or phone. This design would not collect perceptions of non-users.
2. A study could run focus groups with recent users of workforce services. Samples would be smaller, but information would be more in depth and less structured.
3. In as much as the main data collection effort for the study involves a survey, that survey could include questions on veterans' perceptions. That approach would have the advantage of including veterans who do not use workforce services. It thus might provide insights into how programs might change to serve more veterans. Note, however, that considerations of cost and access to administrative data to construct a frame imply that most of the strategies for the main data collection effort do not involve a survey.

Because customer perceptions are only a small item in the research questions, and methods for gathering data are fairly standard, this report will not devote a lot of attention to them. However, the perceptions of both veterans who use AJC services and those who do not—could be useful for DOL in identifying better

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[118]   Because variation in service delivery is largely determined policies of state workforce agencies or local WDBs, obtaining data at the WDB-level may be sufficient for characterizing variation in service provision nationwide. LA survey would still involve data collection from AJC staff, but might not require surveying staff at all AJCs. Instead surveying staff from one or more AJCs within each local WDB area may be sufficient to capture service provision approaches for all AJCs within a local WDB.

ways to persuade veterans to avail themselves of AJC services that would be helpful to them, and ways to modify programs that could better serve them. The accompanying *EDOR* report discusses a broader set of perception-related information, how it might be useful to DOL, and options for collecting it.

Exhibit 8.1. Approaches to obtaining data on Service Provision for a Sample of AJCs Descriptive Analysis Topics and Data to Address Them

Data Source	Relevant Content	Virtues	Limitations
DOL workforce data	Participant-level data on specific services received and the timing of last date each was received, across multiple program, including ES, WIOA, and JVSG.	Data cover all participants in all AJCs—with identifiers for state, WDB, and AJC—which allows for nationwide comparative analyses to identify differences in patterns of service provision across all AJCs at very low cost.	Not possible to disentangle precise order in which services were provided or understand staff coordination or decision-making processes.
Other Local WDB Administrative Data	Beyond data on workforce service utilization, states also keep data on items like costs and employer engagement.	Additional data may be important, as veterans' outcomes may be influenced by providers' work with employers, not just services directly to participants	Data can only be for a subset of the nation. Local WDBs may not be willing to share data. And it would be cost prohibitive to create data arrangements with all 550 local WDBs.
Site visits	Service provision-related information on any subject of interest to the study.[a]	Potential for getting in-depth information on many topics from a variety of perspectives—e.g., WDB leadership, AJC directors, greeters, WIOA counselors, DVOPs, LVERs.	Semi-structured or unstructured data collection means data will inherently be somewhat less standardized across sites. High cost limits the number of AJCs that can be included.
AJC survey	Any topic of interest to the study that can be responded to in closed-ended or short-form answers.[a]	Breadth of topics. Relatively low cost potentially allows for nationwide administration, generating data on service provision.	Data are somewhat less in-depth than site visits. Cost to survey all 2,500 AJCs—especially if a high response rate is required, are non-trivial.

Key: AJC/American Jobs Center. WDB/Workforce Development Board.

[a] Likely topics of interest include: Program goals and context; local conditions (e.g., veteran population and local economy); staffing and supervisory structure; customer flow; identification of eligible veterans; key components of service delivery; connections to training and other services at the AJC and partner locations; challenges with service delivery; program costs; and perceived effectiveness of services delivered.

8.2   Overview of Impact Analysis Options

The second question in DOL's RfP is causal:

> *What key components or approaches are successful or contribute to the success of job counseling, training, and placement service for veterans?*

The generic impact research question would ask: *How do participants' outcomes differ from what the outcomes would be if they did not have access to AJC services, all else equal?* This is the question of relevance to a cost-benefit analysis comparing the entire cost of JVSG services versus the benefit of

JVSG, relative to no JVSG. Restated, DOL's RQ 2 asks a variant of this generic question (emphasis added):

> *How do participants' outcomes differ from what the outcomes would be if they did not have access to **some variant of AJC** services, all else equal?*

By which we mean, not only the effect of being offered the services versus not being offered the services, but the effect of being offered *specific services*—for example, JVSG versus generic WIOA services, intensive services versus only non-intensive services. These are relevant impact questions if the policy challenge is to modify or strengthen services (as opposed to maintain or terminate the program).

Trutko et al. (2016) reviewed approaches to estimating causal impact for their design study of the Homeless Veterans' Reintegration Program. Exhibit 8.2 provides a modified version of their exhibit, summarizing approaches to causal estimation for programs providing services to veterans. Broadly speaking, there are three classes of approaches: experimental (random assignment) designs, non-experimental designs, and outcome studies.

In recent years, DOL has primarily addressed causal impact questions through random assignment. DOL/CEO has indicated that this contract is to design an observational study, that treatment will not in any way be randomly assigned. Given that guidance, here we only briefly discuss random assignment options.

First, we note that random assignment is attractive because it mimics the impact thought experiment. Random assignment ensures that the two groups—those offered the services and those not offered the services—differ only by the random outcome and the treatment of interest. In particular, the two groups do not differ systematically. Thus, comparing those members in the two groups should isolate the impact of whatever was randomized. Other methods do not guarantee that the two groups do not differ systematically. To extract the causal impact, a study needs to control for differences between the two groups. Controlling is hard, and if the methods do not completely control for pre-existing differences between the two groups, the estimates will be biased.

Second, to address the impact of, for example, receipt of DVOP services versus not, the standard random assignment design would randomly deny some people those DVOP services—perhaps allowing non-DVOP AJC services, perhaps denying all AJC services. This design appears to be infeasible and statutorily prohibited.

Exhibit 8.2. Strategies for Estimating Causal Impact

Confidence in Cause-and-Effect	Approach	Summary of Approach	Data Sources	Advantages/Benefits	Challenges/ Disadvantages	Difficulty	Cost
High	Randomized controlled trial (RCT)	Randomly assign applicants to treatment or control status	Administrative data and surveys	Ensures unbiased estimates, findings easy to interpret	Expensive, may violate priority of service requirements, may generate objections from veteran groups, could result in randomization bias, requires more time than other approaches	Very difficult	Medium (high if includes a survey)
High	Differential impact study RCT	Randomly assign grantees or veterans to different service packages	Administrative data and surveys	Can accurately estimate differential impact of service packages	Requires changing service delivery in many sites	Difficult (due to large sample sizes required)	Medium (high if includes a survey)
High	Randomized encouragement design	Randomly assign veterans to marketing or DVOP services	Administrative data and surveys	Ensures unbiased estimates, findings easy to interpret	Requires extremely large samples and high take-up of marketing	Moderate	Medium (high if includes a survey)
Medium (High if includes a survey)	Regression discontinuity design (RDD)	Develop scoring instrument for those interested in program and ration slots based on score; estimate impacts by comparing those close to the cutoff	Administrative data and surveys	If requirements met, considered by many as strongest quasi-experimental design	Formal scoring not currently used, requires larger samples than an RCT	Difficult (due to large sample sizes required)	Medium (high if includes a survey)

Confidence in Cause-and-Effect	Approach	Summary of Approach	Data Sources	Advantages/Benefits	Challenges/ Disadvantages	Difficulty	Cost
Medium	Instrumental Variables	Given some naturally occurring random factor that affects participation, compared outcomes without and with that random factor	Administrative data and surveys (crucially need to measure naturally occurring random factor)	Strong inferences, if an exogenous random factor is available	No natural naturally occurring random factor appears to exist	Impossible due to unavailability of naturally occurring random factor	High; even when a naturally occurring random factor exists, require samples are very large (unless random factor strongly affects participation)
Medium	Group-Level Difference-in-Differences	Before/after comparisons of areas/groups with change in access or details of the program, with a comparison group whose access/details do not change (or change at different time points)	Administrative data and surveys	Individual-level data on use of the workforce system not required	Easier to measure changes in *actual* service delivery rates; better, but harder, to measure changes in service delivery *policy*	Easy for service delivery rates; relatively easy for changes in policy	Low
Medium	Matching (including propensity score matching)	Compare intensive, non-intensive, none; controlling for observed differences	Administrative data and surveys	Less expensive and less intrusive than RCT or RDD; approach widely used Propensity score matching is usually considered superior to other forms of matching and to regression	Considerable disagreement in evaluation community on when approach yields accurate estimates of impact	Easy	Low (medium if includes a survey)

Confidence in Cause-and-Effect	Approach	Summary of Approach	Data Sources	Advantages/Benefits	Challenges/ Disadvantages	Difficulty	Cost
Medium/Low	Regression	Compare intensive, non-intensive, none; controlling for observed differences	Administrative data and surveys	Less expensive and less intrusive than RCT or RDD; approach widely used	Considerable disagreement in evaluation community on when approach yields accurate estimates of impact	Easy	Low (medium if includes a survey
Low	Outcomes study	Simple comparisons of intensive, non-intensive, none; weak or no controls	Administrative data and surveys	Feasible with weak controls	Does not provide impact estimates; if insufficient control variables available, could produce misleading ideas on factors driving outcome differences	Easy	Low (medium if includes a survey

Key: DVOP/Disabled Veterans' Outreach Program. RCT/randomized controlled trial. RDD/regression discontinuity design.

An alternative randomized approach to estimating the impact of DVOP versus no DVOP would be an encouragement design (Holland, 1988; Barnard, Frangakis, Hill, & Rubin, 2003; Duflo, Glennerster, & Kermer, 2008). Some randomly selected veterans would receive incentives to use DVOP—perhaps merely informational mailings, perhaps a cash bonus. With appropriate econometric methods (instrumental variables; Imbens and Angrist, 1994; Angrist, Imbens, & Rubin, 1996), an incentive that induces a lot more veterans to use JVSG, and large samples, this design can give the impact of DVOP on the marginal veteran induced to use the program by the incentive.

Third, similar randomized designs exist for estimating the impact of a component of the DVOP program. Some veterans (or some DVOP offices) could be randomly assigned to longer (or more) meetings, for example. Then the impact of longer (vs. conventional) DVOP meetings could be estimated by comparing outcomes for those veterans randomized to longer meetings versus those randomized to conventional shorter meetings.

Fourth, an approach that is "almost random" can be used to estimate causal impact. In some circumstances, it is plausible that (1) distance to the closest DVOP is approximately random (at least through some range of distances); and (2) use of DVOP varies with distance. Under those conditions, instrumental variables can be used to estimate the impact of DVOPs; that is, outcomes for those veterans who are closer and therefore use more DVOP services can be compared versus outcomes for those who live farther away and therefore use fewer DVOP services. The difference can be used to compute the change in outcomes per additional percentage point of use of DVOP services.[119]

8.3   Impact Analyses Using Matching

An alternative to random assignment would be non-experimental methods, in particular regression correction or some form of matching. Recall that the estimates of causal impact correspond to a thought experiment in which we compare outcomes for those veterans who did and did not get—any or some level of—workforce services, holding all else equal (i.e., for the same person at the same time). In practice, methods of causal estimation attempt to approximate this thought experiment by comparing outcomes of otherwise "similar" individuals. Though properly implemented random assignment ensures that there are *no systematic differences between the two groups*, non-experimental methods can at best compare outcomes *for people who have similar observed characteristics*. The more individual characteristics that are aligned, the more convincing will be such non-experimental methods.

The literature includes many methods for non-experimental evaluation. Given the nature of this study's research questions, the available data, and the state of the literature, some form of matching preferable to regression. This is because matching relaxes regression's functional form assumptions. See Stuart (2010) for an introduction to matching and a broad discussion of current issues.

Conventionally, matching is implemented using propensity scores (Rosenbaum & Rubin, 1983). Under propensity score matching (PSM), veterans' "propensity" (i.e., probability) of using services or a service component is modeled. The evaluation design builds a logistic regression model of how the probability of using the services or component varies with observable characteristics of the veterans in the sample. Then

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[119]   The classic references for such "distance as an instrument" approaches are McClellan, McNeil, and Newhouse (1994), Card (1993, 1995), and Kane and Rouse (1995). For a gentle introduction to these ideas see Newhouse and McClellan (1998). For a general overview of the issues, see Card (1999, 2001). For a critique of distance as an instrument, see Garabedian, Chu, Toh, Zaslavsky, and Soumerai (2014).

impact is estimated by regression models that implicitly compare outcomes among veterans with similar propensities who did and did not use the services/component.

More recently King and colleagues (Iacus, King, & Porro, 2011; King and Nielsen, 2016) have argued for nearest neighbor matching,[120] without estimating a propensity score. Given increasing computer power and new software, nearest neighbor matching also seems worthy of careful consideration.

PSM, nearest neighbor matching, and other matching methods implicitly make a selection on an observables assumption (Imbens & Wooldridge, 2007, 2009; Stuart, 2010). The selection on an observables assumption can be restated as follows: Among those individuals with the same values for the control variables included in the model, it is approximately random who chooses to, or is chosen to, participate in the program. Participants and nonparticipants are not systematically different with respect to control variables that are not included in the model (Angrist, 1998).

This assumption is always problematic. As noted at the start of this section, this assumption is less problematic the richer the set of control variables used. Exhibit 8.3 provides some notes on control variables that would likely be available from various data sources. As Section 4.6 emphasizes, previous studies of the impact of workforce services on veterans have matched only on a very limited set of variables, sometimes finding that veterans receiving workforce services do worse (which seems unlikely, at least beyond the very short-term). In contrast, if the study succeeded in matching across administrative data systems, a rich set of control variables would be available. Those control variables might include aptitude at entry to the military (i.e., education and ASVAB scores—from DoD enlistment data), experiences in the military (service, rank at exit, military occupation—from DoD service data), and recent labor market experience (employment and earnings—from NDNH or state UI data).

Exhibit 8.3. Control Variables by Data Source

Control Variable	Project-Specific Survey	Military Personnel Files	Administrative Earnings Data
Demographics (e.g., age, gender, household/relationship status, residential location)	✓	✓	
Military service (e.g., length of service, rank, branch, and occupation)		✓	
Aptitude/AFQT		✓	
Educational attainment (prior to service, at separation, current)	✓	✓	
History of employment and earnings			✓

Key: AFQT/Armed Forces Qualification Test.
Note: The exhibit encodes the assumption that survey responses cannot reliably collect non-current information on employment and earnings or AFQT score.

With such rich control variables, selection on observables and matching seem more plausible. How plausible is an open issue in the literature (e.g., Dehejia and Wahba, 2002; Smith and Todd, 2001, 2005; Dehejia, 2005; Cook, Shadish, and Wong, 2008). As noted in the previous section, concern about such methods has recently led DOL to rely on random assignment. Consistent with our reading of the current

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[120]   On the details of nearest neighbor matching, see Abadie and Imbens (2006, 2011).

literature, we believe that: Experimental evidence is clearly superior to non-experimental evidence. In the absence of experimental evidence, propensity score matching provides useful information.

If the controls are weak, the evaluation still can run regression, matching, or PSM. In that instance, however, DOL will have only an "outcomes study" rather than an impact study. With weak controls, it is not plausible to claim that these methods estimate impact.

Other non-experimental methods include difference-in differences and instrumental variables. We discuss non-experimental methods in more detail in the *EDOR*.

8.4   Cost-Benefit Analysis

This section considers issues in designing a cost-benefit analysis for the DOL's services to veterans, as specified in RQ 3:

> *What are the costs of job counseling, training, and placement service for veterans? Do estimates of benefits of providing services or implementing policy outweigh the costs of those initiatives?*

Generating methodologically strong estimates of impact, as described in Section 8.2, is a crucial first step. The relative size of benefits and costs can only be determined if we first have credible estimates of the impacts of those services in areas that benefit participants and society, such as future earnings gains and reduced government transfers (e.g., UI benefits). Assuming that the evaluation has generated those methodologically strong impact estimates, the evaluation can then proceed to estimate the costs of services and how those costs compare to the benefits.

The comparison of costs and benefits requires consideration of which are the entities to whom the benefits and costs accrue (individual veterans, the government, etc.), and exactly which types of benefits and costs are relevant to each of those entities. From there we can stipulate how each element will be estimated.

8.4.1   Table to Define Costs, Benefits, and to Whom They Accrue

Our discussion in this section begins from a conventional cost-benefit table (Exhibit 8.4).

Such a table compares net benefit-cost under two different conditions—a treatment condition in which an intervention is in place, compared to a condition in which it is not. The VETS study will involve three paired comparisons: (1) intensive versus non-intensive only, (2) intensive versus no services, and (3) non-intensive services only versus no services. For simplicity, the discussions that follow assume a generic intervention/no intervention comparison.

In what is a standard approach to cost-benefit analysis for a workforce program (e.g., Boardman, et al., 2011; Greenberg & Appenzeller, 1998; Greenberg, Deitch, & Hamilton, 2009), the columns of the table consider net benefit-cost from the perspectives of four groups or entities:

- *Veterans who receive services*
- *DOL*
- *All levels of government (federal, state, local)*
- *Society*

The rows of the table consider the major cost-benefit categories:

- *Earnings*—The major benefit of the DOL workforce programs should be higher earnings for veterans.

- *DOL program operating costs*—The major direct costs of the JVSG, ES, and WIOA programs are paid by DOL, including line staff, supervisors, space, and computer systems.

- *Unemployment Insurance benefits*—The longer veterans are not employed, the more UI and UCX benefits they receive.

- *Other transfer programs payments*—In addition to UI, low-earning veterans get a range of transfer payments (e.g., SNAP, Medicaid).

- *Administrative costs of the other transfer programs.*

- *Taxes paid*—The higher the earnings of veterans, the more they will pay in taxes (e.g., federal and state income taxes, UI payroll taxes, and Social Security and Medicare payroll taxes).[123]

Exhibit 8.4. Expected Financial Effects of DOL Employment and Training Programs (Cost-Benefit Table)

| Cost-Benefit Category | Accounting Perspective | | | | Data Source |
| | Veteran | Government | | Society | |
		DOL	All (fed, state, local)		
Earnings	+	0	0	+	Administrative (UI, SSA, IRS) data or survey data
DOL program operating costs	0	–	–	–	Survey of providers or program administrative data
UI benefits	–	0	+	0	UI benefits data
Other transfer program payments	–	0	+	0	Survey of participants
Administrative costs of the other transfer programs	0	0	+	+	Pubic documents on administrative costs
Taxes paid	–	0	+	0	Survey of participants or IRS data
Net Value	?	–	?	?	

Key: DOL/US Department of Labor. IRS/Internal Revenue Service. SSA/Social Security Administration. UI/Unemployment Insurance.

Note: A plus sign (+) indicates an expected benefit, and a minus sign (–) indicates an expected cost. A zero indicates that the net value is neither a benefit nor a cost. A question mark (?) indicates that the *sum* of benefits and costs (in dollars) from each perspective can net to either a positive or negative value.

Each cell in the Accounting Perspective columns in Exhibit 8.4 contains a plus sign, a minus sign, or a zero. These signs indicate the expected direction of the effect of DOL workforce programs from each entity's perspective, for each category, where a plus sign indicates a net benefit and a negative sign a net cost. For example, from the veteran's perspective, receiving workforce services should generate higher earnings (a plus sign), reductions in UI benefits and other transfer payments received (minus signs), and increases in taxes paid (a minus sign). The changes in program costs of the veteran's participation do not generate any net benefit or cost from the veteran's perspective (at least not a direct effect captured in this accounting), hence the zero in those two cells.

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[123] Note that the UI Benefits, Other Transfer Program Payments, and Taxes Paid rows are relevant only to estimating the benefits/costs to veterans and the government separately. On net, there is no impact on society as a whole, because the negative to veterans and the positive to government budgets are of the same size.

From the Perspective of the Veteran. The net benefits of the DOL workforce programs are approximated by estimating changes in income—through earnings, transfer payments, or taxes paid. Though these effects are the most straightforward to estimate, they are incomplete. The table considers easily estimated and monetized costs and benefits. It does not value radiating benefits beyond earnings (e.g., happiness) and it does not value lost leisure from faster employment.

From the Government Perspective. The net benefits are estimated at two levels—that of the DOL agency budget and the total government budget (federal, state, and local). From the perspective of DOL budgets, only the costs of operating the programs are relevant. The estimated costs and benefits to all government entities reflect both the costs of administering the DOL programs, but also any cost savings to other government programs resulting from program impacts that reduce benefit receipt, and revenue gains resulting from increased earnings and, in turn, taxes paid by participating veterans.

From the Society Perspective. All costs and benefits are counted, whether from the veteran or government perspective. These net effects are typically estimated by simply adding across all the columns. In some cases, the benefits are offsetting—for example, any reduction in UI benefits paid to veterans as a result of receiving workforce services are a negative for the veteran (from an accounting perspective),[122] but an equally sized positive for government budgets. However, this approach to estimating the societal effect is limited for a number of reasons—for example, the limitations on counting non-monetary individual effects, as well as difficult-to-measure indirect effects on non-participants, including labor supply benefits to businesses and effects on communities of higher employment rates (Greenberg, Deitch, & Hamilton, 2009).

8.4.2 Calculating Benefits and Costs

Given this framework, a study would estimate costs and benefits for the 5-year time horizon specified by the enacting legislation. The final column of Exhibit 8.4 considers sources for the required data.

On the benefit side, strategies for impact analysis—discussed in connection with RQ 2 in Sections 8.2 and 8.3 above—provide the key information on who gains and by how much.

The cost side requires that we specify different tools and data sources than were used for impact analysis. Estimating costs is likely to require a survey of providers. The study will not need to survey all providers of special services to veterans, or even all AJCs. Rather, collecting cost information from a random sample of AJCs should suffice. To begin designing the cost analysis, the study team would need to scrutinize the accounting records of AJCs in a few sites to determine how costs are recorded and how they can be broken out by source program and then associated with specific service types and their volumes. In particular, it will be important to distinguish costs of veterans-specific services (i.e., JVSG) from the incremental costs to AJCs of serving veterans in employment programs that serve the general population (most notably, Wagner-Peyser and WIOA). The next step would be to prepare and test a template for cost data collection in all sampled sites, which will serve as the backbone of the cost analysis design. Methods for apportioning estimated costs to veteran assistance versus general AJC employment services will complete the design of this evaluation component.

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[122] Though from the veteran's perspective, the reduced UI benefits are presumably more than offset by the increased earnings.

In the event that any of these benefit and cost data are not available for the entire 5-year period, the study would need to make assumptions about costs and benefits in the years for which data are unavailable, projecting from available data.

When presenting the final results of a cost-benefit analysis, the discussion in the future DOL study would focus on two primary measures. Because there is a time value of money (i.e., the same benefit received in later years is worth less than in the present), estimates of future costs and benefits will be discounted to their present value using a chosen discount rate. The resulting difference between present value costs and benefits will be the *net present value* (NPV) of the program.

In addition to the NPV, we can also generate an estimate of *return on investment* (ROI) per net dollar spent by the government on the program. Also called *benefit-cost ratios*, the ROI ratios are estimated by dividing the benefits of the program by the program's operating costs, calculated as the difference between the treatment and control group costs. Note that depending on the magnitudes of benefits and costs, the ROI can imply a net gain or a net loss on each dollar invested in DOL workforce programs serving veterans.

9. Considerations for Obtaining Required Data

This document is the *Knowledge Development Report* for a contract to develop options for a longitudinal study of veterans and their experiences with the workforce system. Earlier chapters of this document have collected foundational information about the study parameters as defined by DOL's RFP and statute (Chapter 2), veterans (Chapter 3), DOL's workforce system (Chapter 4), extant data (Chapter 5), a new study-specific survey (Chapter 6), matching across data systems (Chapter 7), and methods (Chapter 8).

Drawing on the foundation developed in the previous chapters, this chapter incorporates that information to frame the design challenge facing the study regarding obtaining the data required to answer the broad range of research questions presented for the specified population. The DOL RFP and statute require analyses of the subpopulation of veterans who use intensive workforce services. As the analysis in Section 4.5 showed, this subgroup represents fewer than 225,000 people, about 0.1 percent of all American adults and 1 percent of all veterans (see Exhibit 9.1). The crucial design challenge is identifying that rare population.

To set up the design challenge, Section 9.1 briefly re-summarizes the information needed to satisfy the requirement. Section 9.2 discusses the two broad strategies for addressing that requirement—an administrative data sampling frame and a study-specific survey sampling frame. Section 9.3 presents data highlighting the magnitude of challenge of generating a study-specific survey frame.

9.1 Structure of the Required Analytic File

The DOL RFP and statute require gathering data on the demographics and employment-related outcomes for samples of three groups of veterans: (A) those using intensive workforce services; (B) those using only non-intensive workforce services, and (C) those using no workforce services.

Addressing these requirements requires five, maybe six, types of information.

The first two types, both required, define the sampling frame (i.e., the "frame variables"):

1. *Veteran status*—a single variable, *Y* (for yes), for everyone in the frame.

2. *Workforce system utilization group*—a single variable, coded A, B, or C.

The next two information types specify the required demographics and outcomes data that we are seeking for a sample of veterans across all three workforce system utilization groups:

3. *Demographics*—multiple variables; we use the term *demographics* broadly to include both conventional demographic variables (e.g., gender, race/ethnicity, age, education) and also information on military service (e.g., branch, years in service, date of discharge, rank at discharge, honorable or dishonorable, service-related disability if any).

4. *Outcomes*—multiple variables; examples include earnings, household income, perceptions of and satisfaction with the workforce system.

The utility of, and need for, the final two information types depends on the final design specifications:

5. *Weight*—single variable; captures information about the number of veterans represented by each sampling member. The discussion in Appendix C presents some discussion of weights. If the study uses administrative data, weights are trivial because the sample would already cover the full population and there should be minimal item non-response. However, if the study involves a survey,

weights would vary both because some individuals/households are more likely to be sampled than others (see Section 9.3) and also because—among those sampled—survey response rates will vary. Standard survey sampling techniques suggest how to create weights encompassing both of these considerations (i.e., unequal probability of sampling and unequal probability of response). Details will vary with the exact study design and will be addressed more thoroughly at the appropriate time.

6. *Identifiers*—multiple variables. If the study wants to match across data sources (e.g., between administrative data sources, with extant survey data, with study-specific survey data), identifiers in common will be needed. Standard identifiers are name, SSN, and date of birth, but the particular identifiers will vary depending on the data sources being matched.

The design challenge therefore has two parts. First, the study will need to identify a source for the frame variables (i.e., *veteran status*, *workforce system utilization group*), a corresponding *weight*, and perhaps unique *identifiers* to allow matching. Second, the study will need information on those veterans in the frame—*demographics* and *outcomes*.

9.2   Two Broad Strategies to Build a Sample Frame

There are two broad strategies for building a sampling frame and then merging on the required information.

1. *Administrative data frame*. Use administrative data to (a) build a list of veterans; (b) identify which workforce system utilization group each veteran is in; (c) append basic demographic information; and (d) measure the outcomes of interest. No single administrative data system includes all of these data items. Thus, to be feasible, each administrative data must include a unique identifier in order to link them. In general, the weights will all be 1.0 and therefore trivial.

2. *Study-specific survey data frame*. Find veterans through an ABS-administered screener survey. Through that same screener survey, assign each of these veterans to a workforce system utilization group. Use a follow-on survey (or perhaps the initial screener) to collect demographics and to measure the outcomes of interest. Weights can be generated from information generated in designing and then fielding the survey.

9.2.1   Contrasting Strengths of the Two Broad Strategies

Strengths of an Administrative Data Frame. One strength of an administrative data sampling frame is that it would more likely allow matching to other extant data, and in particular to extant administrative data. Administrative data are usually of higher quality than survey data. For reasons we discuss below, a survey-based frame will generally not support matching to extant data.

A second strength of an administrative data frame is that it provides a natural—and low-cost—way to address the requirement for a longitudinal survey. Once a study matches to administrative data for the first time, it can usually match in every successive period—at relatively low cost. In contrast, a study-specific survey sampling frame must address the longitudinal requirement by resurveying the original sample. One wave of the survey is expensive; future rounds of a survey would also be expensive. (See Section 9.3 for more discussion of the cost of a longitudinal survey.)

A third strength of an administrative data frame is that it will usually yield very large samples—perhaps all veterans, perhaps "only" hundreds of thousands or a few million. In contrast, cost considerations almost certainly imply that any survey will be much smaller. DOL testimony on the original statute (noted in Section 6.3) suggested a total sample size of 12,000; 4,000 for each of the three groups. In the

conclusion to the next chapter, we raise the possibility of considerably smaller samples, perhaps a total of 3,000.

Strength of a Study-Specific Survey Data Frame. The strength of a study-specific-survey frame is that the underlying inquiry can ask questions about all outcomes of interest. In contrast, a strategy using administrative data alone must rely on only those demographics and outcomes variables available in the database to which the study matches.

9.2.2 Hybrid Strategy to Create a Sample Frame

One hybrid approach would be to survey a sample of those in an administrative data frame. Whether doing so is feasible would depend on whether access to the administrative data includes both unique identifiers and permission to survey the individuals included.

Going the other way—matching to administrative data for individuals in a study-specific survey-based frame—appears to be possible in principle, but in practice it is typically not worth the effort.

A major advantage of using administrative data to build the sampling frame is the potentially huge sample sizes. A study-specific survey sampling frame, however, can provide an administrative data sample no larger than the number of completed interviews—which, as noted, is likely to be small.

Compounding sample size concerns with matching to administrative data from a study-specific-survey frame, note that matching to administrative data requires identifiers: name, SSN, date of birth. The survey-based frame would not have that information, so identifiers would need to be collected from survey respondents and merged to the frame. Given concerns about identity theft, it seems likely that even many veterans who agreed to respond to a survey would refuse to provide such sensitive information in a survey. Furthermore, those who provide identify information might be different from those refuse to. Substantial refusal—as seems likely—would raise concerns about representativeness of the sample for whom the study would have administrative data.

9.3 The Challenge of Creating a Study-Specific Sample Frame

Developing a study-specific-survey frame of the set of veterans specified in the DOL RFP faces the fundamental challenge that two of the three targeted groups constitute very small proportions of the total population. Exhibit 9.1 poses the challenge graphically. The discussion in Section 4.5 suggests that only about 223,000 veterans use intensive workforce services in a year. If the study had access to a list of those veterans, it could sample from the list and survey the sample.[123]

In the absence of such a list, finding the veterans who used intensive workforce services will be daunting. To illustrate this "needle in the haystack" problem, suppose the study had a list of veterans and their addresses,[124] but did not know which veterans used intensive services. About 1 percent of veterans use intensive services (1 percent ~ 223,076/20 million), so to find 4,000 veterans who have used intensive services, a survey would need to interview about 400,000 veterans. With a 60 percent response rate, one would need to interview 666,667 veterans.

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[123] If the response rate was 80 percent (as per OMB guidance), then one could draw a sample of 5,000 to complete 4,000 surveys (80 percent of 5,000). If the response rate was a more likely 60 percent, then one would draw a sample of 6,667.

[124] Alternatively, one could use a commercial service to impute addresses for almost all of them.

Exhibit 9.1. Conceptualizing the Sampling Frame

Group Z: Non-Veterans	Group Y: Veterans Not in the Workforce	Group A: Veterans Using Intensive Services 223,076 adults; 0.10% of adults ~ 200,000 households; ~ 0.2% of households
209,954,884 adults 91% of adults ~ 98 million households ~ 84% of households	9,357,448 adults 4.1% of adults ~ 9 million households ~ 8% of households	Group B: Veterans Using Non-Intensive Services (But Not Intensive Services) 675,979 adults; 0.29% of adults ~ 600,000 households; ~ 0.5% of households
		Group C: Veterans Not Using Workforce Services 9,851,829 adults; 4.3% of adults ~ 9 million households; ~ 8% of households

Source: Counts using intensive and non-intensive services are drawn from Section 4.5 and Exhibit 4.2; see the discussion there. Population counts for veterans and adults are from American FactFinder (factfinder.census.gov), using ACS data. Household estimates assume that the vast majority of households with a veteran have only one veteran (See Appendix C.

With a mail survey, costs per survey would be low—perhaps $10 per sampled case. Nevertheless, even with low cost per case, two-thirds of a million cases implies non-trivial costs—about $7 million for a single survey wave. Stratified sampling—on age or geography—would help. Even with a low cost per survey, this is a large number of surveys expended to find 12,000 veterans. This is very inefficient, because surveys are sent out to many more veterans who do not receive services than will be in the study—and are thus "wasted"—just to try and find enough veterans who did receive services. With a list that did identify of veterans by workforce system utilization group to start from, far fewer individuals would need to be contacted.

If the list of veterans includes their age we could gain some additional efficiency—a little, but not a lot (perhaps 20 percent; see Appendix C). This is because the probability of using the workforce system would be expected to vary with age. Older workers—age 60+, and even more so at 65+ and 70+—are much less likely to be in the workforce at all, and therefore would use no workforce services (see Section 3.1). Furthermore, among those in the workforce, it may be that younger veterans are more likely to use intensive workforce services are than older veterans, because they are more likely to be transitioning to the civilian workforce.[125] This information suggests stratified sampling; that is, survey all age groups, but oversample those who are more likely to use intensive workforce services.[126] Calculations in Appendix C suggest that following such a stratified sampling strategy, the total number of surveys required to achieve 4,000 completed surveys would be smaller than 666,667, perhaps as low as 500,000.

In the absence of a list of veterans, the haystack is much larger, and the needle much more difficult to find. Without a list of veterans, ABS is probably the appropriate survey strategy. About 0.2 percent of all households have a veteran using intensive workforce services. It follows that using simple random sampling, a study must survey about 6.7 million households to find 4,000 veterans who used intensive DOL workforce services.[127] Again, this is a lot of "wasted" surveys—even more wasted surveys than

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[125]   If DOL would like the study team to further investigate the potential benefits of targeted sampling, we will further examine differences in veterans' use of workforce services by age.

[126]   See Kalton (2009) for a review of the generic issue and the underlying literature. Key papers include Waksberg (1973), Kalton and Anderson (1986), and Kalton (1993, 2003).

[127]   Surveying 6.7 million households with a 60 percent response rate will yield 4.0 million survey completes of which 4,000 (0.1 percent) will have a veteran using intensive workforce services.

starting from a list of veterans—again looking for 12,000 veterans, and in particular 4,000 veterans using intensive workforce services, at a high cost (even for a single wave).

9.4   Field Methods for Subsequent Survey Waves

To satisfy the requirement to conduct longitudinal research, a study-specific-survey frame would probably require multiple survey waves (i.e., surveys separated by a year or more). The discussion that follows assumes three survey waves, in years 1, 3, and 5.[128]

Relative to the initial survey, the cost for subsequent waves would be reduced. This is because the first wave of the survey bears the initial cost burden of addressing the needle in the haystack problem. At the end of the first wave, the study has a list of veterans who used intensive workforce services.

Going forward, the challenge is to maintain high survey response rates at subsequent waves. To better understand this challenge, consider the following calculation. Suppose that the goal is 4,000 completes at the third wave. If the survey response rate among veterans using intensive workforce services were 60 percent at each wave, then the initial sample would need to be 18,518—to yield 11,111 respondents at the first wave, 6,667 at the second wave, and the target 4,000 at the third wave. In other words, if we accept that 60 percent response rate at subsequent waves of the survey, then we need to more than triple the initial sample size (18,518 vs. 6,667), and the field cost for the initial sample will also approximately triple.

Instead, the optimal strategy is likely to be more-intensive and more-expensive field methods at subsequent waves of the survey. Those more-intensive methods yield higher response rates—allowing a smaller initial sample and lower overall cost. Doing so involves two steps:

1. At the wave 1 interview, and again at all but the last wave, collect tracking information for the respondent and friends and relatives who might know how to reach the respondent a year or more later. That contact information would include current address, telephone numbers, email addresses, social media handles.

2. At subsequent waves, use more-intensive survey field methods. Such a sequence could be, for example, initial mailing, calls to non-respondents to the mailing, and then in-person locating of those who do not respond to the calls/mailing using the contact information collected in the first step. These more-intensive field methods have a much higher cost, perhaps $500 per case. However, the strategy is much cheaper than substantially increasing the initial sample size to allow for higher loss rates at follow-up.

This approach of more intensive survey methods at later waves has the additional benefits of greater face validity from higher response rates.

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[128] Other strategies are possible. The survey could be fielded to all respondents in each year. The details for that would be the same as discussed above, but would double the number and total cost of the follow-up waves. Repeated cross-sections are another potential alternative. Given that the largest cost is in finding the initial sample, that option would be much more expensive. Assuming that group status (intensive services, core services only, or no services) were assigned based on the 12 months prior to the survey, it would also answer a different type of question—outcomes/impacts for the year following service receipt—as opposed to the truly longitudinal design described above that would track outcomes and estimate impacts for five years after service receipt for the same cohort. Given those drawbacks, we do not pursue those options further either here or in the *EDOR*.

10.   Early Data Options for Descriptive Questions

Chapter 9 laid out the broad considerations in specifying design options to answer the research questions specified in DOL's RFP and statute. This chapter provides brief discussion of a broad range of design options. The discussion considers three criteria—ability to achieve research goals, logistical challenges, and cost. Clearly, design options that most effectively optimize these criteria are preferred.

- *Ability to better achieve research goals* (i.e., to answer implementation, descriptive, impact, and cost-benefit questions if the data are successfully obtained) is determined by sample size and coverage of outcome domains of interest. Larger samples gathered at more time points are clearly preferred to smaller samples at fewer time points. If accessible and available for cross-source analyses, administrative data are clearly preferable. Once access is secured, the cost of analyzing records for the entire sample (often all veterans) and over all periods is low.

   In contrast, survey field costs per case are likely to imply that a survey will reach the target sample (e.g., 4,000 completed surveys per group), but not much larger. (See the discussion of the "needle in /the haystack problem in Section 9.3.) The implied samples are much smaller than samples from administrative data. Such survey samples are not sufficient to support many subgroup analyses of interest. As important, samples several times larger would probably be required to support robust estimates of causal impact using matching methods (or any other non-experimental method of impact analysis; see the discussion in Section 4.6). Thus, a pure study-specific-survey option would probably support neither robust causal analysis nor cost-benefit analysis.

   Ability to achieve research goals is also related to the outcome domains for which a design will provide information. As noted in Section 6.1, extant administrative data cover most, but not all, of the domains included in this design project's research questions. Accessing extant survey data could cover additional domains, but continues to leave some uncovered. It follows that strength of analysis is limited for a pure extant data analysis and even weaker for a pure administrative data analysis.

- *Fewer feasibility challenges* to answering the various research questions. Feasibility is primarily driven by data access considerations (Chapters 5 and 7).

- *Lower cost* is determined primarily by the mix of administrative data and survey data. If the option includes a study-specific survey, costs will be primarily a function of the target sample size for the rarest veteran population domain, if the study does not have access to an extant list of veterans who have received services. Additionally, costs will depend on the number of survey waves, sampling method, and interview mode. For simplicity in the body of the chapter, we use DOL's suggestion of 4,000 completed interviews for each of the three workforce system utilization groups—12,000 completed interviews in total. Those sample sizes seem adequate to address the research questions of interest, but it is not clear that collecting relevant data on 4,000 veterans who have used intensive services is an affordable goal given the rarity of the population domain.[129]

   Note also that the cost discussion here concerns only data access and survey data costs. Broader project costs—start-up, instrument development, OMB clearance, ongoing interactions with DOL,

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[129]   Appendix C discusses the derivation of the survey cost estimates.

analysis, report drafting, and data documentation—are not considered. For a 5-year study, those costs are likely to be more than $1.3 million.

Specifically, this chapter discusses nine early data options and briefly notes several others. Exhibit 10.1 summarizes the strengths and weaknesses of each option.

- Section 10.1 discusses four simple and direct data collection designs: (1) an ideal design assuming unrestricted access to administrative data, and perhaps to extant survey data; (2) a safe harbor extant-data design at the Census Bureau; (3) a safe harbor extant-data design at some custodian of earnings data (e.g., NDNH, SSA); and (4) an ABS study-specific survey-only design.

- Section 10.2 discusses three less direct designs: (5) starting from a list of veterans; (6) starting from a large survey that identifies veterans (in particular, the ACS); and (7) starting from state-specific lists of veterans using workforce services, with sufficient detail to separately identify veterans using intensive workforce services.

- Section 10.3 discusses two designs that address only a small set of the research questions, but which might usefully augment pure administrative-data-based approaches: (8) customer service surveys and (9) customer focus groups.

We briefly note in Section 10.4 some other designs that we considered but did not deem worthy of more detailed consideration—at least in this document.

Exhibit 10.1. Summary of Options and Ranking on Three Criteria

Option	Criteria			Data Cost (in millions)	
	Research Goals	Logistical Challenges	Cost	Administrative	Study-Specific Survey[a] (three rounds for Options 1-7)
Direct Design Options					
1. Unrestricted access	B+/A+	D	A/B	$1.5	$30
2. Safe harbor @ Census Bureau	B–/B+	B–/C	A–/C+	$1.5	$44
3. Safe harbor @ earnings-data custodian (NDNH)	B+	B	A–	$1.5	n/a
4. ABS survey	B+	A	F	n/a	$224
Less Direct Design Options					
5. List of veterans	B+	B+	C+	$1.5	$44
6. ACS as frame	B+	B–	C	$1.5	$44
7. Workforce data for some states	B/B+	B+	B+/B	$2.5	$30
Secondary Design Options					
8. Customer satisfaction surveys	C	A–	A–	n/a	$0.1
9. Customer focus groups	C–	A–	A–	n/a	$0.25

Note: Grading system uses standard school conventions: A is best, F is worst. When two grades are separated by a slash (/), the first (left side) grade is for an administrative-data-only effort; the second (right side) grade is for an administrative data effort augmented by a study-specific survey. Costs are very rough estimates and are not meant to be definitive, but rather to help compare the magnitude of differences between options. Survey costs for Options 1 through 7 assume 12,000 completed surveys. Option 8 assumes 1,000 completes apiece for veterans using non-intensive services only and those using intensive services. Option 9 assumes four focus groups at 25 sites. Follow-up survey costs assume use of intensive methods to obtain high response rates. Survey costs would be roughly $24 million lower if administrative data are sufficient for post-baseline information and follow-up surveys are not necessary. See Appendix C for details.

[a] Or other study-specific primary data collection—focus groups in the case of Option 9.

Throughout, the discussion makes two assumptions. The first assumption is that the current de jure and de facto data-sharing rules will continue to apply. The second assumption is that the minimum acceptable sample size is 12,000—4,000 in each of the three groups. We return to both of these assumptions in the final section of this chapter.

Finally, note that the discussion that follows assumes that "workforce services" and "intensive workforce services" include services provided both by the veterans-specific JVSG program and by the broader DOL workforce system, as indicated in DOL's solicitation for the study. Alternatively, the definition might be narrowed to include only services provided by JVSG, excluding services provided to veterans by the broader, non-veterans-specific workforce system. That alternative approach would be consistent with Rep. Paul Cook's indication of statutory intent (see Section 2.1). Using that narrower definition would make the needle in the haystack problem even more severe and substantially increase costs. Nonetheless, the analysis could be done under that alternative assumption—either in place of or in addition to the current analysis using the broader definition. We look forward to DOL/CEO's guidance on this issue.

10.1   Four Direct Designs

We begin our tour of early design options with four simple and direct designs.

10.1.1   The Ideal: Unrestricted Access to Extant Administrative Data

With unrestricted access to administrative data, a nearly ideal study would be possible. Specifically, such a study would

- Build a sampling frame from an administrative-data-derived list of veterans including SSNs.

- Using those SSNs, match the list of veterans to nationwide DOL-held data on use of the workforce system.

- Match the resulting file to administrative data and perhaps to extant survey data on earnings and other outcomes.

- Perform those matches annually, yielding longitudinal data on outcomes available in administrative data.

- Select a subsample of veterans for a study-specific survey to collect information on outcomes not available in extant administrative data. Address and telephone information for all veterans does not appear to be available in any federal administrative data system. For veterans using the workforce system, that information should be in state workforce data. Complementarily, with name, date of birth, and SSN, a commercial data aggregator (e.g., Acxiom, Nielsen/Claritas) could provide addresses and telephone numbers for enough of the sample to support a robust survey.

In this design, the study-specific survey is secondary—filling in outcomes of interest that are not available in extant data. As such, the survey could be small—perhaps 4,000 completed interviews in each of the three groups. Furthermore, because the study would have names and identifiers for veterans using intensive workforce services, the initial wave of the survey would be relatively low cost. Finally, with the administrative data analyses satisfying the longitudinal requirement, one or perhaps two waves of the survey might be sufficient.

Research goals. We refer to this as the "ideal" option because of the strength of the resulting analysis. The analysis would include administrative data for all veterans and extant survey data for all veterans who had been surveyed (e.g., by the ACS). The resulting sample sizes are as large as possible and would

support matching to estimate casual impact. Those matching estimates would in turn support cost-benefit analysis. For a subsample, the survey would fill in outcomes not available in extant data.

Logistical challenges. Barring changes to statute and regulation, this option seems infeasible. It is far from clear that any custodian of a list of veterans would release a list with identifiers (i.e., name, SSN, date of birth, last known address) and permission to contact via survey. Furthermore, no national database of workforce data with needed identifiers currently exists, and it appears that DOL does not have the statutory ability to construct one. For its part, the Census Bureau is prohibited by statute from sharing identified data. Finally, it is unclear whether any custodian of a list of veterans has the right to allow matching of the list to data on earnings and other outcomes.

Cost. This option would have relatively low cost. If access could be obtained, payments to data providers over 5 years would likely be roughly $1.5 million. With a list of veterans stratified by use of the workforce system, a survey effort would sidestep the needle in the haystack problem (i.e., simply finding veterans who used intensive workforce services). There would be few "wasted" surveys. Very rough estimates suggest that a single wave of such a survey might cost $6 million; subsequent waves would have similar cost.

10.1.2   Safe Harbor Extant-Data Design at the Census Bureau

As noted in Section 7.1 and the report of the Commission on Evidence-Based Policymaking (2017), the Census Bureau has broad statutory authority to aggregate and analyze extant data—with minimal requirements for permission from those covered by the administrative data. When a study can be shown to be of use to the Census Bureau's mission and appropriate funding is available, the Census Bureau is sometimes willing to conduct such analyses. This suggests the following strategy:

- Induce data custodians—DoD or VA for a list of veterans, states for data on workforce system utilization, some source of data on earnings—to provide identified data to Census.

- Pay Census to merge those three data inputs with one another and with the ACS (for veterans who responded to the ACS).

- Work with Census to analyze the resulting merged analysis file (on Census's server)

- Work with Census to clear the results for public release.

- (Possibly) fund the Census Bureau to survey veterans who had previously been included in the ACS.

Again, any study-specific survey would be secondary—filling in outcomes of interest that are not available in extant data. As such, the survey could be small—perhaps 4,000 completed interviews in each of the three groups. Furthermore, with the administrative data analyses satisfying the longitudinal requirement, one or perhaps two waves of the survey might be sufficient.

Research goals. Extant data would be quite strong under this option: both extant administrative data and extant ACS data. Sample sizes for extant data analysis would be large: all veterans for administrative data analyses, all veterans interviewed in the ACS for ACS-based analyses.

In the absence of a study-specific survey, domain coverage would, however, be incomplete. If the Census Bureau agreed to and was paid to conduct a study-specific survey using the ACS as a frame, domain coverage could be complete.

Logistical challenges. The Census Bureau does control the ACS, but the ACS alone is insufficient to address the study's research questions. Instead, the key logistical challenge in this design is to access

administrative data covering three crucial concepts—a list of veterans, information on workforce system utilization by veterans, and information on earnings and other outcomes. Census does not directly control administrative data systems that could address these three concepts. Census has received lists of veterans from VA, but Census would appear to need explicit approval from VA to allow this study to use an existing list of veterans. Similarly, Census receives UI wage data from all states and tax data from IRS. Again, even though Census physically has those data, explicit permission of the data custodians would be required for use in another study. Finally, no one—including Census—has a national database of participant-level workforce data with identifiers.

In summary, Census has three major advantages as a safe harbor. First, the Census Bureau controls the ACS data (and will not provide identified data to anyone else). Second, the Census Bureau is a—probably the most—respected safe harbor. Third, the Census Bureau has physical possession and consistent data files for two of the crucial concepts—list of veterans and earnings data.

However, using the Census Bureau as a simple safe harbor—e.g., at a Research Data Center—would still require gaining permission to use its list of veterans and earnings data. It is our sense that—relative to other possible safe harbors—gaining access to a list of veterans would not be substantially easier through the Census Bureau. It is also our sense that gaining access to earnings data in a Census Bureau safe harbor will probably not be possible. Several sources suggested that some states never give access to their UI earnings data at the Census Bureau and that pursuing other states would require negotiations that might not be successful. Similarly, access to tax data would require that we demonstrate a strong benefit to tax collection. Sources suggested that this would be challenging.

There is a second approach to accessing data of which the Census Bureau has physical control. Discussions with Census Bureau staff and other informed observers suggest that the hurdle for accessing data in the physical control of the Census Bureau is lower for a "Census project." Furthermore, for some purposes, a non–Census Bureau project for which the Census Bureau is a full partner and a Census Bureau staffer is a full member of the research team is viewed as a Census Bureau project.

Though we will explore this option in the next phase of knowledge development, it is important that we point out several disadvantages of this approach. First, Census Bureau staff representatives stated that current resource constraints preclude taking on any new projects. This condition might, however, be temporary. By the time this study would be funded, Census might again start taking on new projects. Alternatively, several groups are already collaborating with Census on veterans' issues; several of those groups expressed considerable interest in partnering with DOL.

The second disadvantage is that partnering with Census would require DOL to relinquish some control over the study. The Census Bureau prefers to be granted unlimited use of data provided as part of such partnerships; for example, for other Census Bureau analyses beyond the original agreement. Some data custodians prefer to retain more control over how their data are used.

Relatedly, any studies done in partnership with the Census Bureau require Census Bureau approval for public release. This entails not only review for inappropriate data disclosure, but also review for statistical methods, for the substance of the findings, and for how the results are conveyed.

In addition, the Census Bureau staff member associated with the project would be a full member of the research team. That is likely to involve considerable input into research questions, research methods, and final text of any publications. We note that the statute requires a study by "a non-government entity," so any Census Bureau staff would be in addition to DOL's non-governmental partner.

Cost. This option would probably also have low cost. However, the cost would be higher than the first, "ideal" option, especially if there was to be a study-specific survey.

10.1.3 Safe Harbor Extant-Data Design at an Earnings-Data Custodian

This option is identical to the previous one, except that some custodian of earnings data would serve as the safe harbor. Possible custodians include the OCSE's NDNH group or SSA. The discussion uses the NDNH example. Issues appear similar if SSA provided the safe harbor and its own earnings data.

In either case, the steps would be as follows:

- NDNH already controls the earnings data.

- Induce data custodians—DoD or VA for the list of veterans, states for data on workforce system utilization—to provide identified data to NDNH.

- Pay NDNH to PIK all of the data files.

- Work on DOL's secure server with the resulting PIK'd files.

Research goals. Extant administrative data would be strong under this option. Sample sizes for extant data analysis would be large; all veterans for administrative data analyses. However, unless data custodians also provide identifiers to the study team (outside the safe harbor), a study-specific survey would appear to be impossible. Without those survey data, domain coverage would be incomplete.

Logistical challenges. Relative to using the Census Bureau as a safe harbor, this option seems more likely to yield the crucial earnings data. Relative to using the Census Bureau, this option would probably be a slightly, but only slightly, less trusted safe harbor for states or other federal data custodians.

Cost. This is a comparatively low-cost option.

10.1.4 ABS Survey Instead of an Extant Frame

The study could use a pure address-based sample design, which would entail the following:

- Stratify low levels of geography by a proxy for use of intensive workforce services by veterans.[130]

- Purchase a list of addresses, oversampling geography identified as dense in veterans using intensive workforce services. If available, purchase a list with a veterans flag (even if imperfect) to support oversampling of those addresses.

- Make an initial screening mailing inquiring about veteran status and use of workforce services.

- Make a second mailing to all veterans who report using intensive services, and to the same number of veterans from each of the other two groups (those who report using only non-intensive workforce services and those who used no services), selected at random. Note that because the number of

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[130] Aggregate PIRL data should be able to provide counts of veterans using intensive workforce services that could then be aggregated up to Census Bureau Public Use Microdata Areas. ACS data would provide counts of households for those same areas. Combining these data gives rates of use by households. Those rates are key input for stratified random sampling.

screened respondents in the groups vary, the selection probabilities will also vary across groups in order to yield equal numbers of sample members in each group.[131]

- Weight the final data for differential probability of selection—of the initial household and then by subsampling for veterans and various groupings of use of workforce services—and for differential survey non-response.

- Re-survey that same population at a later date (e.g., in year 3 and year 5)—satisfying the longitudinal requirement. To maintain high response rates and large samples at follow-up, re-survey(s) have interviewers attempt to call sample members. For those not reached on the phone, use field locating.

It does not seem worthwhile to ask for SSNs and permission to link to administrative data. Given concerns about identity theft, it is hard to imagine that veterans would provide their SSN or permission to link in a mail survey.

Research goals. Given that the study controls survey content, there is no problem with domain coverage. There are, however, concerns about response errors and survey non-response. The experience of the *National Survey of Veterans* suggests likely response rates of 60 percent or lower. Those rates are low enough to induce concern about non-response bias (but see Groves [2006]; Groves & Peytcheva [2008]; Peytcheva & Groves [2009]).

Given high costs of screening, final samples sizes are likely to be small: 4,000 for intensive services and much larger for the other two groups. These samples are too small to support most subgroup analyses. Many estimates would likely be "noisy." In addition, samples of this size are not sufficient to estimate causal impact using non-experimental methods (see Section 4.6). Furthermore, there would likely be no linking to administrative data.

Finally, data would be available only for the limited number of survey waves. Retrospective data—especially on outcomes such as earnings and income—are so unreliable as to not be worth asking.

Logistical challenges. The clear advantage of this approach is feasibility. No external agency need provide data—not DoD or VA (for a list of veterans), not states (workforce data), and not some other entity like SSA or OSCE providing earnings data.

Cost. As we detail in Exhibit 9.1, veterans using intensive workforce services are present in only about 0.2 percent of all households. Thus, this design has a major needle in the haystack problem. As a result, even with optimal stratification, this design must survey millions of households and will therefore have very high cost. Very rough calculations in Appendix C suggest costs on the order of $200 million for the initial survey wave and $12 million for each subsequent wave. Thus, the total field cost of a three-wave longitudinal study would be on the order of $224 million. That would be an expensive survey effort and several times more costly than the planning factors provided to us informally by several key informants.

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[131] The proportion of screened respondents selected to receive a second mailing in the "non-intensive services only group" would be roughly 33 percent, because there are about three times as many individuals in that group. Because the overwhelming majority of veterans contacted will be in the no services group, a far smaller proportion of them will receive a second mailing.

10.2   Three More Complicated and Less Direct Designs

The previous section sketched three simple and direct designs. Each faces inherent challenges. The first and ideal, "Unrestricted Access" design is almost certainly infeasible under current circumstances. The second, "Safe Harbor at the Census Bureau" design is probably not feasible. The third, "Safe Harbor at an Earnings-Data Custodian" design may be feasible, but only for limited data. The fourth, "No Frame, ABS Survey Instead" design is feasible, but appears to be cost prohibitive.

Other, more complicated, and less direct, designs may be worthy of additional consideration.

10.2.1   List of Veterans from Administrative Data

If DoD or VA provided a list of veterans with name, DOB, SSN, and date of birth and permission to survey them, the study could proceed as follows:

- Pay a commercial data aggregator to append contact information (address, telephone number, email address) to a random sample from the list of veterans. Assuming age data are available, use stratified sampling; that is, oversample younger veterans who are more likely to use intensive workforce services. (See Appendix C for details.)

- Use ABS to survey that sample, probably a two-phase survey (screener and then a full survey for a subset).

- Append the survey data—including workforce system utilization group—to the list of veterans.

- Match the resulting file to administrative data, and perhaps to extant survey data.

- Match again in subsequent years to fulfill the longitudinal study requirement.

Research goals. This would be a study-specific survey. It could therefore cover all domains. Starting from a list with SSNs, it would also be possible to link to administrative data—for those we survey, and thereby determine their utilization group. Administrative data could be used to satisfy the longitudinal study requirement.

Sample sizes would be about 4,000 for intensive services; much larger for the other two groups. Again, these samples are too small to support most subgroup analyses. Many estimates would be "noisy." In addition, samples of this size are not sufficient to estimate causal impact using non-experimental methods (see Section 4.6).

Logistical challenges. This design option requires a list of veterans—with identifiers—and permission to survey them. It is not clear that access to such a list can be obtained.

In addition, this design implicitly assumes that permission of veterans surveyed would not be needed to link the list of veterans and survey responses to other administrative data on outcomes. Such permission might be required; in that scenario, permission rates are likely to be low. If so, the ability to link to administrative data is, in practice, lost. As a result, a survey would again be needed to fulfill DOL's requirement for a longitudinal study.

Cost. Survey field efforts for this design option would "only" be about $20 million (vs. $200 million for the pure ABS option described in Section 10.1.4). With a list of veterans, the needle in the haystack problem is less severe, though far from trivial. With SSNs, there is no need for follow-up surveys (assuming that permission is not needed). However, if linking to administrative data is not possible, then this design would require three waves of surveys. As a result, survey cost rises to $20 million.

10.2.2 American Community Survey as a Frame

A study using veterans identified in the ACS as a frame might proceed as follows:

- From recent ACS interviews, select a sample of veterans to survey, oversampling by age and geography to increase the probability of finding veterans who use intensive workforce services.

- Survey those veterans, using the addresses at which they were located for the ACS and forwarding information.

- (Perhaps) use a commercial data aggregator to find subsequent addresses for veterans who have moved.

- Match the resulting file to administrative data, and perhaps to extant survey data.

- Match again in subsequent years to fulfill the longitudinal study requirement.

Research goals. This would be a study-specific survey. It could therefore cover all domains. Starting from a list with SSNs, it would also be possible to link to administrative data—for those we survey, and thereby determine their utilization group. Administrative data could be used to satisfy the longitudinal study requirement.

Sample sizes would be limited by the size of the ACS. The ACS survey is huge—about 2 million households per year. However, veterans using intensive workforce services are a rare sub-population. About 0.2 percent of households include such a veteran. It follows that even if the study surveyed every veteran in the ACS and if every veteran responded, the study would still find only about 4,000 veterans who used intensive workforce services. Accounting for movers and survey non-response, that final sample would probably be closer to 2,000.

Using multiple years of the ACS would increase the number of veterans found who used intensive workforce services. However, the ACS is an address survey. Once individuals move, they become harder to find, and response rates would drop. Thus, adding a second year would approximately double field costs, but sample size would not increase as much—perhaps only by half or two-thirds. Additional completed surveys from adding a third year are likely to be even smaller.

Even more than for the previous analysis in Section 10.2.1, these samples are too small to support most subgroup analyses. Many estimates would be "noisy." In addition, samples of this size are not sufficient to estimate causal impact using non-experimental methods.

Logistical challenges. There is limited precedent, for using the ACS as a frame to survey rare populations. Additional discussion with the Census Bureau would be needed to better understand the feasibility of this early design option. Furthermore, it is unclear what administrative data on earnings would be available to such a study.

Cost. Restrictions on access to identified ACS data mean that only the Census Bureau, not any outside survey group, could field the survey. So the Census Bureau would not face competition and the study would likely incur somewhat higher survey field operation costs than it would using private sector providers. Total survey field costs would perhaps be $20 million (See Appendix C). Inasmuch as administrative data could be used to satisfy the longitudinal study requirement, no subsequent survey waves would be needed.

10.2.3 State Workforce System Data for a Subset of States

DOL is prohibited by statute from creating a national database of participant-level workforce data; however, the states' own workforce systems have administrative data with identifiers—name, address, SSN, date of birth—that they strip before submitting their data to DOL. Having access to these data solves the needle in the haystack problem, but does not provide a list of veterans who did not use any workforce services. Thus, an alternative strategy is to work through the states. Such a dual-frame strategy might proceed as follows:

- Recruit states to participate in the study; that is, to provide their identified workforce data and permission to survey. Past experience recruiting states for other studies suggests that there will be moderate costs per state recruited (months of staff time), so the most desirable states are those with large populations of veterans and large numbers of veterans using intensive workforce services. See Section 3.1 for a discussion of the concentration of veterans and Section 4.5 for a discussion of veterans' use of intensive workforce services by state.

- Survey a subsample of the veterans appearing in states' workforce data using a higher probability of selection for veterans using intensive workforce services and lower probabilities for the more prevalent veterans using non-intensive workforce services only.

- (Perhaps) match the entire state data file to federal administrative data, and perhaps to extant survey data.

- (Again perhaps) match in subsequent years to fulfill the longitudinal study requirement.

- Field an ABS survey in the participating states to find veterans who do not use workforce services at all. That survey should oversample geographic areas with high prevalence of veterans in the workforce.[132]

- Create a single set of weights for this dual frame (list of veterans using workforce services and ABS survey) effort.

Collectively, three factors suggest that this is a less than elegant design option: (1) that only some states would participate; (2) that some cases would come from a list and some from ABS; and (3) that administrative data would be available for only some of the cases. Nevertheless, in relative terms, it may be the most attractive design option.

Research goals. This would be a study-specific survey. It could therefore cover all domains.

For veterans who used any workforce services, the study would have individual identifiers. It could thus match to administrative data—for those who used the workforce system, but not for those who did not.

Sample sizes would be limited only by budget and the size of the participating states. As we discuss below, cost per case would likely to be relatively low, so samples larger than 12,000 could be considered. However, unless many states (particularly those with larger numbers of veterans using intensive workforce services) participated, even surveying all veterans using intensive workforce services might not yield 4,000 completed interviews. In fact, such cases might be so rare as to require more-labor-intensive survey field methods.

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[132] It does not seem worthwhile to ask for identifiers and permission to link; permission rates seem likely to be so low as to imply that the resulting data are not usable.

Such a study would be representative only of the states that agreed to participate. Given that some states would likely decline to participate, this implies that the resulting study would not be a proper sample of the full population of interest (e.g., it would not be possible to create fully correct weights). This is a standard drawback in all such state-specific (or site-specific) designs in that they support less strong analyses.

Logistical challenges. The only logistical challenge is whether states would provide data for the study. Recruiting states would be resource intensive (perhaps $1 million). Some version of this strategy seems almost certainly feasible.

Cost. In this design, state workforce data provides a list of the two rarer workforce system utilization groups—veterans using intensive services and veterans using non-intensive services only. For those two groups there is no needle in the haystack problem, which sharply reduces costs of finding those veterans. However, the study would also need to separately identify veterans who did not use workforce services.

ABS could be used to those veterans. About 11 percent of households will have such a veteran.[133] Calculations in Appendix C show initial survey costs in the range of $5 million.

If DOL chose to satisfy the requirement for a longitudinal survey only for those using any workforce services (those two rarer workforce system utilization groups), then administrative data would be sufficient. There would be no additional survey costs for follow-up rounds. Two rounds of follow-up survey with intensive field methods would cost roughly $12 million per round.

10.3   Two Secondary Designs

If feasible, pure administrative data designs have strong advantages—much larger samples, better data quality (for domains covered), much lower cost. However, pure administrative data designs are limited to the information available that is routinely gathered. The statute's RQs require some information that does not appear to be available in administrative data:

> *(J) In the case of such an individual who received services under this chapter, whether the individual believes that any service provided by a Disabled Veterans' Outreach Program specialist or Local Veterans' Employment Representative helped the individual to become employed.*

> *(K) In the case of such an individual who believes such a service helped the individual to become employed, whether … the individual believes such a service helped the individual to secure a higher wage or salary. …*

> *(O) Whether such individual had contact with a One-Stop Career Center employee while attending a workshop or job fair under the Transition GPS Program of the Department of Defense. [134]*

Because a pure administrative design could not answer those RQs, and we have detailed the challenges in combing administrative data and survey data, in this section, we discuss small and relatively inexpensive supplemental data collection efforts that could address those RQs. Because of their ability to address all

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[133]   The ACS can provide information on the fraction of veterans in the workforce by Public Use Microdata Areas. Oversampling those can raise the effective prevalence rate to perhaps 10 percent.

[134]   https://www.congress.gov/114/plaws/publ315/PLAW-114publ315.pdf

research questions at relatively low cost, combining a pure administrative data effort with such a supplementary data collection effort for the remaining RQs might yield attractive options.

In particular, note a challenge of study-specific approaches is finding the rare veterans who used intensive workforce services among the general population. However, these veterans were in the AJC at some point to receive the services. However, the direct way to use this information would be to get state workforce data. As noted above, whether that would be possible is unclear. In the absence of state workforce data, the incomplete designs below exploit the ability to find participating veterans in individual AJCs to yield information at a low cost. The disadvantages of these approaches are that the resulting samples are small, and the resulting data probably cannot be linked to administrative data.

10.3.1   Customer Satisfaction Surveys

Veterans using workforce services—intensive or non-intensive only—are in an AJC to receive those services. They are thus, in principle, available to be surveyed. It seems likely that most states, WDBs, and AJCs would allow such surveys.

A standard approach would be to take a random sample of AJCs and days in the survey period. For the selected AJCs and days, veterans using workforce services would receive a paper survey and an envelope while they are in the AJCs. They would complete the survey at the AJC after workforce services were received, place the survey in the envelope, seal the envelope, and put it in a collection box (or drop it in the mail back to the evaluation team).

Ensuring an adequate response rates will be an issue. The first step to maintaining high response rates would be to construct a survey instrument that is short, perhaps two to four pages. No identifiers would be collected. Total costs to obtain 1,000 completes for each of the two service-use groups would be roughly $100,000 (see Appendix C).

10.3.2   Client Focus Groups

Alternatively, over a short period, perhaps a month, the study could collect a list of all veterans receiving services—stratified by intensive or only non-intensive only. A sample of those veterans would be invited to participate in a focus group, to occur at the AJC or perhaps at some neutral facility. Participants would receive a small payment for their time (at the focus group, as well as their travel to and from it) and for their costs of travel. Perhaps $50 for a 90-minute session.

Focus group sessions would proceed according to established research standards, including the use of a trained moderator and a written protocol that includes both questions and probes. The protocol would provide for basic content and organization; however, the discussion would be allowed to proceed organically.

Relative to a customer service survey, sample sizes for focus groups would be smaller. Bias from non-random selection of veterans into the study would be even more severe, but costs would probably be lower. Costs to conduct four focus groups apiece at 25 AJCs would run roughly $250,000 total—$10,000 per site (See Appendix C).

10.4   Three Other Designs, Briefly Noted

The several other designs relegated to this last section are—in our preliminary judgment—are more problematic than the preceding nine.

10.4.1 Snowball Sampling

Snowball sampling begins with several members of the population of interest and asks them to identify other members of the population. Those identified individuals are in turn asked to identify more members of the population. The process can continue for several more iterations.

This method is commonly used to sample rare populations whose members have affinity relationships to other members of the same population. A recent example is a study of transgender veterans (Dietert, Dentice, & Keig, 2017). It is only effective if people in the rare population tend to know one another. It is also critically important that people in the targeted rare domain trust the data collector enough to be willing to identify members of their personal networks.

It is reasonably easy to select a sample of veterans using an ABS design. The challenge is to find those who used the intensive services. If a sample of 8,000 veterans were interviewed as a first wave from an ABS design and each asked to nominate 10 other veterans, from the resulting 80,000 veterans we would expect to find 800 who used the intensive services of interest. This number is still well shy of the desired 4,000 users of intensive services, but could be obtained at far more reasonable cost than screening a probability sample for the proverbial needle in the haystack.

The disadvantage of such snowball sampling is that the sample will not be a probability sample. Therefore, model-based procedures will be needed to analyze the results, rather than design-based methods. Most seriously, socially isolated veterans who use these services will be underrepresented. Some correction for this should be feasible if a question on the main survey asks each person about the depth of their social network. As long as the main survey is a probability sample, unbiased national estimates of veterans by depth of social network can be prepared. These can then be used to prepare pseudo-design weights for the snowball sample.

10.4.2 Interviewers at AJCs

If enough door greeters were posted at AJCs for enough time, it theoretically would be possible to find a sufficiently large sample of veterans using intensive workforce services. We have not estimated how many person hours of greeters would be required or at how many AJCs, but we expect it would be very expensive (more than 10 times as expensive as ABS). Moreover, AJCs might find the presence of greeters to be an annoyance that interferes with normal AJC operations. Veterans might be unwilling to sit for a long survey after meeting AJC staff; an alternative might be to collect basic contact information at the AJC and then survey later using some combination of email/internet, phone, and in-person. If DOL is interested, we can prepare an estimate of how many greeter hours would be required.

10.4.3 List of Veterans Using JVSG Services

The statutory language prohibiting the creation of a national database of personally identifiable information for users of some workforce services is from WIOA authorization and does not appear to apply to JVSG (see Section 5.2). If DOL were able to receive SSNs for JVSG participants, it would be possible to use that national database as a list for a survey or to match to administrative data.

This strategy would have one clear advantage. It would allow a much cheaper study-specific survey. If the study defined intensive workforce services narrowly—that is, to include only JVSG-provided intensive services, then a dual-frame strategy would be possible (this option is related to the option in Section 10.2.3, but with weaker sampling and follow-up—and therefore less representative). First, from the national list, survey those receiving JVSG-provided intensive workforce services. Second, survey the other groups either (1) through ABS or (2) from a list of veterans (e.g., from DoD or VA). Either

approach would yield some (but only a handful) of veterans using intensive workforce services. They could also be included in the sample.

This design option requires a survey, but rather than looking for the very rare veterans using intensive workforce service, the survey is only looking for veterans using only non-intensive workforce services. Veterans using only non-intensive workforce services are three times as common as veterans using intensive workforce services. As a result, this option would "waste" only a third as many surveys, so a $3 million survey without access to such a list would cost only about $1 million if such a list was available.

This strategy has several challenges. First, no such database currently exists, and whether it would be legal to create one is unclear. Second, this would identify only veterans using one type of intensive services (i.e., those provided by DVOPs) but not the other type (i.e., services provided by regular WIOA staff). Because DVOPs serve only veterans with significant barriers to employment, veterans without such barriers would be excluded. A study following this approach would either need to give up on WIOA-delivered intensive services—and the types of veterans who use those services—or collect that information from other sources.

10.5   Relaxing Assumptions

This chapter's judgments about ability to address research goals, logistical challenges, and cost have been based on assumptions about data-sharing rules and sample sizes. It is worthwhile to revisit both of those assumptions.

Data-Sharing Rules. This assumption was that the current de jure and de facto data-sharing rules would continue to apply. Preliminary discussions with data custodians suggest that, to a great extent, the restrictions on data sharing are in legal statute. Congress mandated this study and Congress could amend the legislation to specifically require data sharing—by DoD or VA of a list of veterans; by states of identifiers in workforce data; and of some earnings data by state UI programs, NDNH, SSA, or the IRS. Furthermore, Congress could require that any such data sharing include the right to survey.

Perhaps more plausibly, the type of data sharing required under either of the "Safe Harbor" design options (Section 10.1.2 or 10.1.3) would be covered by the proposal of the Commission on Evidence-Based Policymaking. The Commission has specifically proposed changes to data-sharing legislation to explicitly permit data matching for statistical purposes, subject to appropriate safeguards. If such legislation were to be enacted, those two design options would likely become feasible.

Sample Sizes. This assumption was that the target sample size is 12,000—4,000 in each of the three workforce system utilization groups. The analysis here has used it as a useful starting point, as it is a plausible sample size.

That said, it seems worthwhile to consider much smaller samples. As discussed in Section 4.6, a sample of 4,000 per group is almost certainly not large enough to support robust estimates of the causal impact of workforce services. Attempting to estimate causal impact on samples of this size is likely to lead to a finding of no evidence of impact—even if there are substantively important impacts. Furthermore, robust estimates of causal impact would provide the "benefits" for a cost-benefit analysis. In their absence, cost-benefit analysis is not possible.

If, however, a study gives up on estimating causal impact and cost-benefit analysis, much smaller samples become worthy of consideration. A standard sample size for polling is 1,000 cases. A sample of 1,000 in

each of the three utilization groups—and thus a total sample of 3,000 veterans—would allow straightforward characterizations of the three populations. Samples of that size would allow estimation of percentages with a confidence interval of plus or minus 3 percentage points.[135] For comparison the corresponding confidence interval for 4,000 cases per group would be half as wide, or plus or minus 1.5 percentage points.

Designs that will support 4,000 cases per group would have costs approximately four times as high as the cost of 1,000 cases per group. Given the goals of this study, it is not clear that the additional precision is worth the additional cost.

That judgment requires more guidance from DOL as to the goals of the study and the available budget.

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[135] If the population prevalence of the outcome of interest is one-half and the sample size is 1,000 (i.e., $p=.05$ and $N=1,000$), the resulting standard error of the estimate is 1.58 percentage points. A 95 percent confidence interval would be plus or minus 1.96 times that standard error, or 3.099 percentage points. Furthermore, $p=.05$ is the worst case. As the population prevalence diverges from one-half, the standard error falls. Thus, the plus or minus 3 percentage points statement in the body of the document.

11. Concluding Thoughts

This document concludes the project's knowledge development phase. It reports what has been learned and begins the task of specifying design options. The first section of this chapter restates the knowledge developed and its implications for design options (Section 11.1). The second and final section of this chapter briefly considers the relation between this and the *Evaluation Design Options Report.*

11.1 Knowledge Developed and Implications for Design

Our knowledge development activities identified several key facts—each with implications for the study.

1. *There are two broad strategies—administrative data versus a study-specific survey—each with advantages and disadvantages.* Robustly combining the two strategies may not be feasible. Administrative-data-based strategies are much cheaper and yield much larger samples and higher-data quality, but they do not cover all research questions. Conversely, a study-specific survey could ask about anything and thus cover all research questions. However, cost would be far higher, leading to much smaller samples, and reduced ability to generate definitive findings from the data. In particular, sample sizes would be too small to support robust observational estimates of the impact of workforce services. Without robust estimates of impact, estimates of cost-benefit are also not possible.

   Though it is natural to explore any opportunities to combine the two; i.e., collecting survey and administrative data for the sample individuals. If starting from a survey, that approach would require gathering identifiers—name, date of birth, SSN—from survey respondents. In the current identity-theft-aware environment, refusal to provide that information seems likely to be so common as to vitiate the strategy.

   Conversely, starting from administrative data requires contact information—address, telephone number, email—and permission to contact in order to field the survey. Recovering contact information from name and date of birth is probably possible; however, whether a study could gain access to administrative data with permission to contact is unclear. As we discuss below, access to de-identified administrative data is likely to be challenging; access to identifiers with permission to contact is likely to be more so.

   If, as it appears, collecting administrative and survey data for the same individuals is not feasible, CEO will need to make hard choices between using one or the other, each of which has very marked advantages and disadvantages.

2. *Veterans using intensive workforce services are a rare population.* The most recent available data suggest that veterans using intensive workforce services represent very roughly 0.2 percent of all adults and about 2 percent of all veterans.

   Unless a list of veterans using intensive workforce services is available to the study, administrative-data-based approaches are impossible and survey-based strategies will have high costs. The high costs are the result of "wasted" surveys; that is, surveying large numbers of people who are not veterans who used intensive workforce services in order to find the rare veteran who used them.

3. *DOL does not currently have an identified list of veterans using intensive workforce services.* The states have such lists, but DOL is prevented by statute from creating a single national list. Furthermore, it is unclear whether DOL can require the states to provide such lists to a study. Even if

DOL could, and especially if it could not, accessing that data and processing it into a single consistent file would be expensive.

If access to national data is not possible, recruiting states and working with their data is worthy of consideration. Whether that strategy would satisfy the requirement from DOL's RFP and the statute for a "statistically valid" study is unclear. That issue aside, the state data approach is only worthwhile if at least a moderate number of states and the states with larger veteran populations agree to participate. Based on experiences with similar efforts, it seems likely that some, but not all, states would agree. Whether enough of the larger states would agree is unclear.

4. *DOL does not control any of the administrative data required for an administrative-data-based study.* Though DOL does not control identified data on use of intensive workforce services, DOD and VA do control lists of veterans. VA controls information on use of veteran's benefits. There are multiple possible sources of earnings and income data (state UI earnings data, OCSE/NDNH, SSA, IRS). Due to the sensitivity of the underlying data, however, all of the corresponding data custodians put strict limits on access. Whether a study could get access at all and the conditions of access are unclear.

Even if access to a list of veterans using intensive workforce services could be arranged, getting access to other administrative data required for an administrative-data-based study is likely to be challenging. It is our sense that the crucial access issue is earnings data. It is also our sense that access challenges can be overcome, but doing so will require considerable effort and may substantially constrain the nature of the analysis. In particular, the data custodian providing some approach allowing access to earnings data will shape the rest of the design.

Ongoing broader (i.e., not specifically for this study) discussions between DOL/CEO leadership, VETS leadership, and data custodians have the potential to radically improve this situation. Similarly, adoption of the recommendations of the Commission on Evidence-Based Policymaking would also radically improve this situation.

5. *Administrative data alone could address many, but not all, of the research questions.* Some outcomes of interest are simply not recorded in any administrative data. Others are recorded in ways that might not be worth the effort required to acquire.

A pure administrative-data-based analysis would not address all of the research questions. DOL/CEO will need to consider how to address that issue. One approach is a main administrative data analysis, with supplemental analyses to address other issues. Those secondary analyses—such as using focus groups—may, however, also not meet the requirement for a statistically valid sample.

11.2   Closing Thoughts

This document is the *Knowledge Development Report* for a contract to, as described by DOL's RFP, "develop evaluation design recommendations that will allow the Department… to implement an evaluation(s) to meet the requirements of H.R. 6416 (Sec 502) and add to the evidence base on veterans' workforce development and employment assistance needs." This involves developing options to answer implementation, descriptive, impact, and cost-benefit questions. This report has presented what is known about veterans employment outcomes, their use of DOL's workforce system, service provision to veterans in AJCs, and the impacts of those services—as well as current knowledge gaps in each of those areas. The report has also provided an overview of potential methods and data to answer the set of research questions presented—including some information on the pros and cons of different options. Because the breadth of

descriptive questions specifies gathering a wide range of information for a very specifically defined set of groups of veterans presents particular challenges in obtaining data, this report places particular attention on developing understanding regarding potential data options.

The project's *Evaluation Design Options Report* provides deeper analysis of a set of study design options (both methods and data) that were identified as most promising in conversations with DOL/CEO regarding the findings in this report. That analysis will include trade-offs among options on various dimensions to help DOL better understand—and thereby be in a better position to improve—workforce services to veterans and veterans' labor market outcomes.

Appendix A. Knowledge Development Activities to Date

This appendix summarizes the array of knowledge development activities undertaken in support of this analysis.

The cornerstone of the effort was a series of key informant interviews. Exhibit A.1 lists the interviewees and the date of each meeting. All interview were conducted via conference call using an approved semi-structured interview protocols. Copies of the protocols are available on request.

Exhibit A.1. Key Informant Interviews

Agency/Group	Date	Interviewee(s)
DOL-BLS	11/13/17	Jim Borbely
DOL-VETS	11/14/17	Luke Murren
DOL-ETA/OPDR	11/14/17	Annie Leonetti, Toquir Ahmed, and Cesar Aceveo
Census	12/27/17	Joshua Mitchell, Lisa Blumerman, Ashley Austin
SSA	01/05/18	Paul Davies
VBA	01/12/18	Jocelyn Moses
Census	01/17/18	Josh Mitchell, Ashley Austin, Scott Boggess, Sonia Porter, Nikolas Pharris-Ciurej, Kelly Holder, Richard Schwartz, Tori Velkoff
VA	01/18/18	George Sheldon
Veterans Education Success	01/22/18	Carrie Wofford
DOD	01/24/18	Paul Rosenfeld, Scott Seggerman, Nathan Ainspan, Miliani Jimenez
DOD	02/02/18	Sam Peterson
West Point	02/05/18	William Skimmyhorn, Richard Patterson

In addition, we conducted three-hour site visits to two American Jobs Centers. On February 2, 2018 we visited the Arlington Jobs Center, an AJC operated by the Alexandria/Arlington Regional Workforce Council. During the site visit we met with four staff members:

- Howard Feldstein, AJC Director
- Sandra Smith, Project Manager
- Cynthia Prospers, DVOP Specialist
- Christopher Finta, LVER

And on June 25, 2018 we visited the West Los Angeles WorkSource Center in Culver City, CA. During that visit we met with:

- Lidia James, AJC Director
- Jacqueline James, DVOP Specialist
- Marvin Wilson, LVER
- Ted Tenorio, DVOP Specialist

As with the phone interviews, the discussions in this visit proceeded using semi-structured interview protocols, which are available on request.

We also contacted several scholars to ensure that we had identified the full array of relevant literature on related topics. These individuals are listed in Exhibit A.2.

Exhibit A.2. Additional Literature Contacts

Name	Affiliation
Josh Angrist, Ph.D.	Ford Professor of Economics, Massachusetts Institute of Technology
Burt Barnow, Ph.D.	Amsterdam Professor of Public Service, Trachtenberg School of Public Policy and Public Administration, George Washington University
Colleen Chrisinger, Ph.D.	Oregon Department of Revenue
Meredith Kleykamp, Ph.D.	Dr. Charles H. Coates Faculty Fellow, University of Maryland
Linda Rosenberg	Senior Researcher, Mathematica Policy Research
Stephanie Boraas	Survey Researcher, Mathematica Policy Research

Appendix B. DoD Separation Forms

B.1 DD Form 2648

SERVICE MEMBER PRE-SEPARATION/TRANSITION COUNSELING AND CAREER READINESS STANDARDS EFORM FOR SERVICE MEMBERS SEPARATING, RETIRING, RELEASED FROM ACTIVE DUTY (REFRAD)

SECTION I - PRIVACY ACT STATEMENT

AUTHORITY: 10 U.S.C. 1142, Preseparation Counseling; transmittal of medical records to Department of Veterans Affairs.

PURPOSE(S): To record pre-separation counseling services and benefits requested by and provided to Service members; to identify pre-separation counseling areas of interest as a basis for development of an Individual Transition Plan (ITP). The signed pre-separation counseling checklist will be maintained in the Service member's official personnel file. Title 10 USC 1142, requires that not later than 90 days before the date of separation, for anticipated losses, pre-separation counseling for Service members be made available. For unanticipated losses, or in the event a member of a reserve component is being demobilized under circumstances in which operational requirements make the 90-day requirement unfeasible, pre-separation counseling shall be made available as soon as possible within the remaining period.

ROUTINE USE(S): Disclosure of records are generally permitted under 5 U.S.C. 552a(b) of the Privacy Act of 1974, as amended. Applicable Blanket Routine Use(s) are: Law Enforcement Routine Use, Congressional Inquiries, Disclosure to the Department of Justice for Litigation Routine Use, Disclosure of Information to the National Archives and Records Administration Routine Use, and Data Breach Remediation Purposes Routine Use.

To the Department of Veterans Affairs for the purpose of available benefits to the Service member.

The complete list of DoD Blanket Routine Uses can be found online at http://dpcld.defense.gov/Privacy/SORNsIndex/BlanketRoutineUses.aspx

The applicable system of records notice is: DMDC 01, Defense Manpower Data Center Data Base

The SORNs may be found at http://dpcld.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570561/dmdc-01/

DISCLOSURE: Disclosure is voluntary however it may not be possible to initiate preseparation counseling and other transition assistance services or develop an Individual Transition Plan (ITP) for a Service member if the information is not provided.

SECTION II – SERVICE MEMBER PERSONAL INFORMATION

1. NAME		2. DOD ID NUMBER	3. GRADE	4. DATE OF BIRTH	5. SERVICE	5a. COMPONENT
6. UNIT NAME		6a. UNIT ID CODE	6b. MILITARY INSTALLATION			
7. ANTICIPATED DATE OF SEPARATION	7a. REASON FOR SEPARATION		7b. TYPE OF SEPARATION		8. DATE FORM WAS INITIATED	

9. MEMBER ALLOWS THIS FORM TO BE SENT TO FEDERAL AGENCIES FOR ADDITIONAL TRANSITION ASSISTANCE POST SEPARATION:

9a. MEMBER ALLOWS THIS FORM TO BE SENT TO FEDERAL AND OTHER AGENCIES WHO LOOK FOR CRITICAL LANGUAGE SKILLS AND/OR REGIONAL EXPERTISE THAT COULD BE VITAL DURING TIMES OF NEED, CRISIS, AND/OR NATIONAL EMERGENCIES:

9b. POST-SEPARATION EMAIL:	9c. POST-SEPARATION PHONE NUMBER:

10. MILITARY MEMBER/CAREGIVER/LEGAL GUARDIAN/DESIGNEE GOING TO BE PRESENT DURING PRE-SEPARATION COUNSELING:

SECTION III – PRE-SEPARATION / TRANSITION COUNSELING, PRE-SEPARATION / TRANSITION COUNSELING NEEDS ASSESSMENT, REVIEW, AND VERIFICATION TO MEET CAREER READINESS STANDARDS (CRS), AND VOW COMPLIANCE

Service members shall be counseled on all items prescribed in Title 10, United States Code (U.S.C.), Chapter 58, Sections 1142(b) (1-17), Sections 1143, 1143a, 1144, 1145, 1146, 1147, 1148, 1149, 1150, 1151, and 1154, and DoD policies; involuntarily separated Service members have alternative benefits and programs that apply to them. Service member completed the following to meet Career Readiness Standards (CRS):

*Required

	Pre-Sep Assessment	Capstone CRS Review
11. Completed Pre-Separation Counseling: *		
12. Completed the Veteran Affairs (VA) Benefits Briefings I and II: *		
13. Completed the Department of Labor (DOL) Employment Workshop: *		
14. Registered on eBenefits *		
15. Prepared a criterion-based Financial Plan for military to civilian transition *		
16. Completed a criterion-based Individual Transition Plan (ITP) *		
17. Completed a Continuum of Military Service Opportunity Counseling (Required Active Component Only)		
18. Evaluated transferability of military skills to civilian workforce / Complete DoD Standardized Gap Analysis *		
19. Documented requirements and eligibility for licensure, certification, and apprenticeship *		
20. Completed an assessment tool to identify personal interests and leanings regarding career selection *		
21. Completed a job application package or received a job offer letter *		
22. Received a DOL Gold Card and understands post-9/11 Veterans have priority at DOL American Job Centers *		
23. Completed an assessment tool to identify aptitudes, interests, strengths, or skills		
24. Completed a comparison of higher academic or technical training institution options		
25. Completed a college, university, or career technical training application or received an acceptance letter		
26. Confirmed one-on-one counseling with a higher education or career technical training institution advisor		

27. I WAS COUNSELED AND RECEIVED DOCUMENTATION ON ALL ITEMS IN SECTION III, WHICH INCLUDES ALL ITEMS LISTED ON THE PRE-SEPARATION / TRANSITION COUNSELING ADDENDUM SHEET:

28. PRE-SEPARATION / TRANSITION COUNSELING WAS COMPLETED WITH 89 DAYS OR LESS REMAINING BEFORE SEPARATION:

28a. PRE-SEPARATION / TRANSITION COUNSELING COMPLETED 89 DAYS OR LESS JUSTIFICATION:

29. SERVICE MEMBER SIGNATURE & DATE	30. TRANSITION COUNSELOR SIGNATURE & DATE

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SECTION IV – OTHER REQUIREMENTS	
31. EVALUATED POST-TRANSITION TRANSPORTATION REQUIREMENTS AND DEVELOPED A PLAN TO MEET PERSONAL/FAMILY NEEDS:	
32. EVALUATED POST-TRANSITION HOUSING REQUIREMENTS AND DEVELOPED A PLAN TO MEET PERSONAL/FAMILY NEEDS:	
SECTION V – OTHER CURRICULUM ATTENDANCE	
33. ACCESSING HIGHER EDUCATION TRACK:	
34. ENTREPRENEURSHIP TRACK:	
34a. ADDITIONAL ENTREPRENEURSHIP TRACK TRAINING (8 WEEK COURSE):	
35. CAREER TECHNICAL TRAINING TRACK:	
SECTION VI – CAPSTONE REVIEW	
36. SERVICE MEMBER SIGNATURE & DATE	37. TRANSITION COUNSELOR SIGNATURE & DATE
SECTION VII – COMMANDER OR COMMANDER'S DESIGNEE VERIFICATION	
38. APPLICABLE CAREER READINESS STANDARDS MET:	41. COMMANDER OR COMMANDER'S DESIGNEE SIGNATURE & DATE
39. VIABLE ITP COMPLETED:	
40. WARM HANDOVERS EXECUTED:	
SECTION VIII – WARM HANDOVER TO SUPPORTING AGENCIES CONTACT INFORMATION	
42. VETERANS AFFAIRS:	
43. DEPARTMENT OF LABOR:	
44. OTHER RESOURCE:	
SECTION IX – REMARKS	
45. REMARKS:	

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SECTION IX – REMARKS (CONT.)

45. REMARKS (CONT.):

DRAFT

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B.2 DD Form 214

CAUTION: NOT TO BE USED FOR
IDENTIFICATION PURPOSES

THIS IS AN IMPORTANT RECORD.
SAFEGUARD IT.

ANY ALTERATIONS IN SHADED AREAS
RENDER FORM VOID

CERTIFICATE OF RELEASE OR DISCHARGE FROM ACTIVE DUTY (Continuation Sheet)
This Report Contains Information Subject to the Privacy Act of 1974, As Amended.

1. NAME (Last, First, Middle)	2. DEPARTMENT, COMPONENT AND BRANCH	3. SOCIAL SECURITY NUMBER

(Specify the item number of the block continued for each entry.)

S
A
M
P
L
E

21.a. MEMBER SIGNATURE	b. DATE (YYYYMMDD)	22.a. OFFICIAL AUTHORIZED TO SIGN (Typed name, grade, title, signature)	b. DATE (YYYYMMDD)

DD FORM 214C, AUG 2009

SERVICE - 2

Appendix C. Details on Cost Assumptions and Calculations

This appendix provides detail on the very rough cost computations provided in Chapter 10. The costs presented here only consider data acquisition. Additional costs for project management, construction of analysis files, analysis, reporting, and dissemination are likely to exceed $1 million, but are not included here.

The estimates presented are quite preliminary and should only be viewed in terms of relative "orders of magnitude" (e.g., $100,000 vs. $1 million, $1 million vs. $10 million) It is our sense that these relative estimates will be sufficient for DOL/CEO to rule out further analysis of some—perhaps many—options. As we note in Chapter 11, once DOL indicates which options are worthy of deeper consideration we will refine our cost computations—for those options.

This appendix is structured as follows. Section C.1 presents very rough per-veteran included in the file cost assumptions (e.g., cost per attempt, response rate). Section C.2 similarly provides very rough population prevalence assumptions (e.g., how many households need to be contacted to locate one veteran that used intensive workforce services).

Then, using these the assumptions from Section C.1 and Section C.2, for each of the ten design options specified in Chapter 10, Section C.3 provides estimates for the total cost of the initial data collection. (Costs for follow-on survey waves to satisfy the "longitudinal" requirement are provided in Section C.5.) For the first seven design options, the discussion provides a very rough cost estimate for the base design and for alternatives. Alternatives considered include a study-specific survey for administrative data-primary designs and second and third survey waves to address the requirement for a longitudinal survey. Finally, Section C.4 briefly discusses costing for the last three options.

C.5 considers the cost of longitudinal survey follow-up. These costs were not included in the cost estimates presented in Section C.3. In part, this is because, when feasible, longitudinal administrative data follow-up is probably more attractive. It would yield higher quality data, on larger samples, at lower cost—and the outcomes of interest for the longitudinal component are almost all available in administrative data.

C.1 Cost per Respondent

The costs estimates that follow are based on the following assumptions.

- *Administrative Data*: $500,000 to set up agreements to match and $250,000 per year thereafter. These costs include time for a contractor to negotiate with the data custodians, direct payments to the data custodians to prepare the required files, direct payments to the safe harbor to match the data and for a seat. Details will vary with the exact files to be matched and who does the matching. For our purposes, the implied $1.5 million for working with administrative data is a useful working estimate.

- *Mail Survey* either using ABS or from a list for a first-round of data collection (follow-up rounds are discussed in C.5). Assumed cost per attempt $50; assumed response rate 50 percent. Cost per attempt implicitly includes: (i) the possibility of a two part survey; i.e., a screener and then a longer survey for veterans or veterans using workforce services; (ii) three mailings to get initial response; (iii) costs for incentives; and (iv) cost to generate an address from a name and date of birth.

  Response rate assumption of 50 percent considers: (i) inability to generate any address; and (ii) appending an incorrect address. Together these two parameters imply a cost per complete of $100.

Note that this 50 percent response rate is well below OMB's 80 percent response rate standard. At the very least, this would trigger a requirement for a non-response bias analysis.

- *Intensive Survey Methods*. For some purposes, a study might want to achieve a higher response rate. Examples include identifying a list of veterans using intensive workforce services (a rare population) or conducting follow-up interviews with those contacted in an earlier wave. Intensive survey methods might include calling from a list or field interviewing.

  Assumed cost per attempt $500; assumed response rate 75 percent. Together these two parameters imply a cost per complete of $667. This cost per attempt and response rate implicitly assume: (i) sufficient contact and location information and (ii) a receptive population. This 75 percent response rate is slightly below OMB's 80 percent response rate standard. Recent experience suggests that achieving 80 percent is unlikely, especially when considering the imperfect address information that is likely to be available. At the very least, this would trigger a requirement for a non-response bias analysis.

  Note that this implies that a study that started with 12,000 cases (i.e., 4,000 in each of the three workforce utilization groups) in Year 1 and resurveyed using intensive methods in Years 3 and 5 would have total costs for those two later waves of $12 million (12,000 x $500 x 2) and about 9,000 completed surveys at each of the two later waves (Year 3 and Year 5). As we discuss in Section 10.5, a total initial sample of 3,000 (i.e., 1,000 in each of the three workforce utilization groups) might be appropriate. That would imply costs for Years 3 and 5 together of "only" $3 million.

We note again that these are order of magnitude estimates. It would not be surprising if they are off by a factor of two—i.e., the true value is twice as large or half as large—and perhaps even more. We provide them here only to support order of magnitude estimates of the costs of various design options.

C.2   Cost Implications of Veterans' Population Prevalence

Among design options that include a survey, the options vary in the population from which they start (e.g., have a list) and the sub-populations which they are trying to locate. For most of the survey options, cost appears to be determined by the challenge of screening, i.e., surveying larger populations looking for a rare sub-population.

This section provides estimates of the prevalence of the rarest target population across multiple sources of origin.[136] Other less rare sub-populations are located at essentially zero cost.

With that introduction, we consider four cases.

- *An ABS survey, starting only with a list of addresses for all postal addresses.* The challenge is to find veterans who used intensive workforce services in the last year. Any survey that finds enough veterans using intensive workforce services will also find more than enough veterans using only non-intensive workforce services and more than enough veterans using no workforce services.

  ABS surveys households. There are approximately 118 million households in the United States. Exhibit 4.2 reports our best estimate—about 223,000 veterans using intensive workforce services in a year. Assuming at most one veteran per household, 0.19 percent of all households would contain a

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[136]   In locating a member of the rarest population will also locate many members of less rare populations.

member of this rarest group.[137] Consistent with the very rough nature of the cost estimates here, we round to 0.2 percent; i.e., 1 in 500. Thus, to locate 4,000 veterans using intensive services in the last year, a survey would need to contact 2 million households; to locate 1,000 such veterans would require contacting "only" 500,000.

- *Starting with a list of veterans.* Again, the challenge is to find veterans using intensive workforce services. Any survey that finds enough veterans using intensive workforce services will also find more than enough veterans using only non-intensive workforce services and more than enough veterans using no workforce services.

  We assume that the list of veterans includes their age and that we could sample older veterans—who are less likely to be in the labor force—at a lower rate. Currently, there are 20.9 million veterans. Slightly more than half, 10.6 million, are in the labor force (i.e., employed or actively searching for work). Slightly fewer, 9.6 million, are over age 65, where veterans over age 65 have a labor force participation rate of 19.5 percent (vs. over 60 percent for veterans under age 65); the other 11.3 million are under age 65.[138] Thus, veterans using intensive workforce services in a year represent slightly less than 2 percent of all under age 65 veterans (223,000/11.3 million=1.97 percent); i.e., 1 in 50 non-elderly veterans. Thus, to locate 4,000 veterans using intensive services in the last year, a survey would need to contact 200,000 households; to locate 1,000 such veterans would require contacting 50,000.

- *Starting with both a list of veterans and a list of veterans using intensive workforce services in the past year*. DOL or state workforce data would provide a list of veterans using intensive workforce services, but not a list of veterans using workforce services (perhaps in the state). An instance in which this could occur is if a study obtained JVSG data with SSNs, but not data for programs like ES that are used by customers who never receive intensive services. In that case, the main challenge is to find veterans using only non-intensive workforce services. Any survey that locates enough veterans using non-intensive services will have contacted more than enough veterans using no workforce services.

  Table 4.2 estimates that about 676,000 households use only non-intensive services in a year. Again, we assume that the list of veterans -includes their age and that we could sample older veterans—who are less likely to be in the labor force—at a lower rate. Thus, veterans using non-intensive workforce services in a year represent slightly more than 6 percent of all under age 65 veterans (676,000/11.3 million=5.98 percent). Thus, to locate 4,000 veterans using non-intensive services in the last year, a survey would need to contact 67,000 households; to locate 1,000 such veterans would require contacting about 17,000.

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[137] This computation implicitly assumes that veterans are spread evenly throughout the country. In fact, veterans are geographically clustered. That geographic clustering implies that stratified sampling (i.e., oversampling areas with a larger fraction of veterans) would yield some savings. If this approach is under serious consideration, we will do additional computations to estimate the cost savings. Rough analyses for similar problems suggest savings of perhaps 10 to 20 percent. Given the order of magnitude nature of the estimates in this appendix, we ignore this possibility.

[138] Counts of veterans, overall by age and by labor force status from https://www.bls.gov/news.release/vet.t02A.htm.

- *An ABS survey of veterans not using any workforce services.* Table 4.2 estimates that about 899,000 veterans used any workforce services—intensive or non-intensive; i.e., about 10 percent of non-elderly veterans. For our purposes, this number can be ignored. Instead our challenge is to find a sample of the 10.6 million veterans in the workforce among the 118 million households. For our purposes, this is about 10 percent (9.83 percent = 10.6 million veterans in the workforce / 118 million households). Thus, to find 4,000 veterans not using workforce services, we would need to reach 40,000 households; to reach 1,000 veterans, we would need to reach 10,000 households.

C.3   Cost Estimates for Design Options 1 to 7

This section discusses costs for the first seven design options.

Design Option 1—Unlimited Access to Administrative Data.

- *Pure Administrative Data*: $1.5 million

- *One Round of Survey*: There is no prevalence problem; the effort has lists of each of the three groups. Using intensive methods, additional cost of $6 million for 12,000 completes (at $500 per complete); $1.5 million for 3,000 completes. Using mail methods, additional cost of $1.2 million for 12,000 completes (at $100 per complete), $300,000 for 1,000 completes.

Design Option 2—Safe Harbor at Census

- *Pure Administrative Data*: $1.5 million

- *One Round of Survey from ACS*: This was prevalence computation B in Section C.3. The ACS surveys about 3.5 million households a year, yielding about 400,000 households with a veteran and 8,000 households with a veteran using intensive workforce services in the past year. The sample is sufficiently large. Using mail methods, additional cost of $20 million for 12,000 completes (survey 200,000 veterans households at $100 per complete to yield 4,000 households with a veteran using intensive workforce services); $5 million for 3,000 completes.

Design Option 3—Safe Harbor at NDNH

- *Pure Administrative Data*: $1.5 million

- *One Round of Survey*: Not feasible.

Design Option 4—ABS Survey (no administrative data frame)

- *One Round of Survey*: Using mail methods, cost of $200 million for 12,000 completes (survey 2,000,000 households, 1 in 500 will have a veteran who used intensive workforce services in the past year yielding 4,000 such individuals; cost per complete $100); $50 million for 3,000 completes. (This was prevalence Computation A in Section C.3.)

- *Administrative Data Follow-up*: Not feasible.

Design Option 5—List of Veterans

- *One Round of Survey*: Cost of $20 million for 12,000 completes (survey 200,000 veterans' households to yield 4,000 households with a veteran using intensive workforce services; cost per complete $100); $5 million for 3,000 completes.

- *Administrative Data Follow-up*: $1.5 million, if logistically possible, which it may not be.

Design Option 6—ACS as a Frame

Cost components are identical to Design Option 2 (Census as Safe Harbor), except the base and the alternative flip. I.e.:

- *One Round of Survey from ACS*: Cost of $20 million for 12,000 completes (survey 200,000 veterans households at $100 per complete to yield 4,000 households with a veteran using intensive workforce services); $5 million for 3,000 completes. This was prevalence computation B in Section C.3.

- *Administrative Data Follow-up*: $1.5 million

Design Option 7—Workforce services data for Some States

If a national list of veterans is available, costs are similar to, but probably slightly higher than, Design Option 1 (Unlimited Access to Administrative Data). Costs would be slightly higher because of the need to find veterans who are in the participating states, but do not use workforce services. Doing so appears to require assigning addresses to a sample of veterans. Note also that 4,000 veterans using intensive workforce services in the last year is about 2 percent of the total veteran population. Thus, would require recruiting multiple states.

- *Pure Administrative Data*: $2.5 million; the standard $1.5 million for administrative data analysis, plus $1.0 million to assign addresses to a random sample of veterans, such that we identify 4,000 veterans in participating states. Costs would be lower if participating states include a large share of veterans in the nation; costs would be higher if participating states including only a small share of all veterans in the nation.

- *One Round of Survey*: There is no prevalence problem; the study has lists of two groups (veterans using intensive workforce service and veterans using only non-intensive workforce services) and is not trying to survey the third group (i.e., veterans not using any workforce services). Additional cost of $6 million for 12,000 completes (at $500 per complete); $1.5 million for 3,000 completes.

An alternative strategy would try to use this information to field a survey; i.e., a list based survey of veterans using workforce services and ABS for veterans not using workforce services.

- *One Round of Survey*: Total cost of $4.8 million for 12,000 or $1.2 million or 3,000, which is the sum of two activities. This total is the sum of costs for two activities.

  The first activity is assembling a list based sample of those using workforce services. Using mail methods, it would cost $800,000 for 8,000 (i.e., 4,000 in each of two groups) or $200,000 for 1,000 in each group; i.e., two groups of 4,000 each (at a cost to complete of $100 per case using mail methods as in ABS).

  The second activity is conducting an ABS to find veterans in the workforce not using workforce services. This was prevalence computation D in Section C.3. It would have a cost of $4 million for 4,000 and $1 million for 1,000; i.e., reach 40,000 to yield 4,000 veterans (at a cost of $100 per complete).

- *Administrative Data Follow-up*: Not feasible.

C.4   Notes toward Costing Design Options 8 to 10

This final section provides notes towards costing design options 8, 9, and 10.

Design Option 8 calls for small scale consumer satisfaction surveys at AJCs. The implicit strategy here is less formal. The samples could be smaller with less concern about representativeness. Here, having AJC staff distribute questionnaires (and envelopes in which to return the survey to the evaluation; or link to a web site with an online survey) seems appropriate. Costs could be well under $25 per case. One thousand cases might be reasonable; total cost $25,000.

If the goal was 1,000 cases using intensive workforce services and 1,000 using only non-intensive workforce services, one would need to increase the sample size to about 4,000 (about a quarter of veterans getting any workforce services get intensive services; see Exhibit 4.2). The implied cost is therefore $100,000.

Design Option 9 calls for conducting focus groups at selected AJCs. Using standard assumptions (two staff per group) a team could conduct four focus groups (two a night, over two nights) on a three day trip (including travel). Including travel, cost would be very roughly $10,000 per site. Twenty five sites might cost $250,000. Again, there would be no data collection from those who do not use workforce services. Drawing the sample would require that states share lists of veterans using workforce services—and provide permission to contact them. Response rates to focus group requests tend to be quite low, so representativeness is a concern. Samples are small, so there is concern about simple sampling variability.

List of Veterans Using JVSG Services calls for recruiting individuals into the study at AJCs immediately following interaction with the workforce system. Clearly some other strategy would be needed to recruit those who do not use the workforce system.

For those recruited at the AJC, there is a challenge of identifying a proper sample given multiple possible uses of the system. Veterans who come to an AJC more than once would be at risk of being oversampled. It is possible to create proper weights but doing so would require identifying the total number of visits and whether any of them were for intensive services.

There are two options for conducting the recruiting. The first option is AJC staff. This however, is likely to lead to low response rates and a non-random sample since they have other priorities. The alternative is to station contractor staff at AJCs. This option is unattractive because the flow of visits is low. Very roughly the average AJC delivers intensive services to only two veterans per week.[139] Optimal sampling strategies would involve oversampling large AJCs; i.e., those that provide intensive workforce services to large numbers of veterans. Even so, it seems unlikely that even oversampling will generate above one per business day (i.e., five per week). At this pace, identifying one thousand cases requires five person years and implies a cost per case of well over $500 per case. This analysis suggests that this is an expensive option, for low data quality ($1.5 million for 3,000 cases).

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[139]   Exhibit 4.2 estimated 223,000 veterans receiving intensive workforce services annually. There are about 2,500 AJCs. This implies an average of about 100 per year or 2 per week.

C.5   Cost of Longitudinal Survey Follow-Up

There are several possible approaches to longitudinal survey follow-up. These costs appear to be nearly invariant to the other options, so we present them here (rather than with each design option). The discussion below assumes two waves of follow-up—presumably in Year 3 and Year 5.

The high end strategy would be to use intensive survey methods. Total cost: $12 million for 12,000 initial completes and 9,000 completes at follow-up (at $500 per attempt). Starting from 3,000 initial completes, the cost would be $3 million for 2,250 completes at follow-up.

A low end strategy would be to use less intensive methods, yielding a smaller sample. Total cost: $1.2 million for 12,000 initial completes and 6,000 completes at follow-up. Starting from 3,000 initial completes, the cost would be $300,000 for 1,500 completes at follow-up.

Also worth considering, but not priced here, would be an intermediate strategy in which the initial sample size was increased, such that the final sample size was larger than for the less intensive methods. For example, supposed the target follow-up sample size was the same as for the high end strategy; i.e., 9,000 or 2,250. Then, rather than reaching 12,000 (or 3,000) at the initial survey, the survey would attempt to reach 18,000 (or 4,500) at the initial survey. Then, even the lower response rate to the less intensive survey methods (i.e., 50 percent rather than 75 percent) would yield sample sizes at follow-up equal to the intensive survey methods.

Whether this strategy is attractive depends on two factors. First, this design option would yield very low survey response rates. This would raise questions about non-response bias; i.e., even after weighting, do the respondents represent the full population of interest? Are the low response rates of less intensive survey methods themselves a concern? Second, what is the cost of additional cases? If the study has a list of veterans stratified by use of the workforce system (as in Design Options 1 and x), then this strategy may be cost effective. In contrast, in the absence of a list of that form, gaining additional sample is so expensive that it precludes serious consideration.

References

Abadie, A., & Imbens, G. W. (2006). Large sample properties of matching estimators for average effects. *Econometrica, 74*, 235–267.

Abadie, A., & Imbens, G. W. (2011). Bias-corrected matching estimators for average treatment effects. *Journal of Business and Economic Statistics, 29*, 1–11.

Abt Associates. (2008). *Employment histories report: Final compilation report.* Prepared for the U.S. Department of Veterans Affairs. Retrieved from https://www.va.gov/vetdata/docs/SurveysAndStudies/Employment_History_080324.pdf

Administration for Children and Families, Office of Child Support Enforcement [ACF/OCSE]. (2017, March 10). *A guide to the National Directory of New Hires.* Retrieved from https://www.acf.hhs.gov/sites/default/files/programs/css/a_guide_to_the_national _directory_of_new_hires.pdf

Allison, P. D. (1994). Using panel data to estimate the effects of events. *Sociological Methods & Research*, *23*(2), 174–199.

Amaya, A., Leclere, F., Carris, K., & Liao, Y. (2015). Where to Start: An Evaluation of Primary Data-Collection Modes in an Address-Based Sampling Design. 79(2), 420-442.

Andersson, F., Holzer, H. J., Lane, J. I., Rosenblum, D., & Smith, J. (2013). Does federally-funded job training work? Nonexperimental estimates of WIA training impacts using longitudinal data on workers and firms (Working Paper No. 19446). Cambridge, MA: National Bureau of Economic Research.

Angrist, J. D. (1989). Using the draft lottery to measure the effect of military service on civilian labor market outcomes. *Research in Labor Economics*, 10, 265-310.

Angrist, J. D. (1990). Lifetime earnings and the Vietnam era draft lottery: Evidence from Social Security administrative records. *The American Economic Review, 80*(3*)*, 313–336.

Angrist, J. D. (1991). The draft lottery and voluntary enlistment in the Vietnam era. *Journal of the American Statistical Association*, *86*(415), 584–595.

Angrist, J. D. (1998). Estimating the Labor Market Impact of Voluntary Military Service Using Social Security Data on Military Applicants. *Econometrica*, 66(2), 249-288.

Angrist, J. D., & Chen, S. H. (2011). Schooling and the Vietnam-era GI Bill: Evidence from the draft lottery. *American Economic Journal: Applied Economics*, *3*(2), 96–118.

Angrist, J. D., Chen, S. H., & Song, J. (2011). Long-term consequences of Vietnam-era conscription: New estimates using Social Security data. *The American Economic Review*, *101*(3), 334–338.

Angrist, J. D., Imbens, G., & Rubin, D. (1996). Identification of causal effects using instrumental variables. *Journal of the American Statistical Association, 91*(434*),* 444–455.

Angrist, J., & Krueger, A. B. (1994). Why do World War II veterans earn more than nonveterans? *Journal of labor economics*, 12(1), 74-97.

Angrist, J. D., & Krueger, A. B. (1999). Empirical strategies in labor economics. *Handbook of Labor Economics*, *3*, 1277–1366.

Angrist, J. D., & Krueger, A. B. (2001). Instrumental variables and the search for identification: From supply and demand to natural experiments. *The Journal of Economic Perspectives*, *15*(4), 69–85.

Angrist, J. D., & Pischke, J. S. (2010). The credibility revolution in empirical economics: How better research design is taking the con out of econometrics. *The Journal of Economic Perspectives*, *24*(2), 3–30.

Autor, D. H., & Duggan, M. G. (2007). Distinguishing income from substitution effects in disability insurance. *American Economic Review, 97*(2), 119–124.

Autor, D. H., Duggan, M. G., Greenberg, K., & Lyle, D. S. (2016). The impact of disability benefits on labor supply: Evidence from the VA's Disability Compensation program: Dataset. *American Economic Journal: Applied Economics.* http://dx.doi.org/10.1257/app.20150158

Autor, D. H., Duggan, M. G., & Lyle, D. (2011). Battle scars? The puzzling decline in employment and rise in disability receipt among Vietnam era veterans. *American Economic Review, 101*(3), 339–344.

Autor, D. H., Kostøl, A. R., & Mogstad, M. (2015). Disability benefits, consumption insurance, and household labor supply. http://econ.as.nyu.edu/docs/IO/40780/mogstad2015

Autor, D. H., Maestas, N., Mullen, K. J., & Strand, A. (2015). Does delay cause decay? The effect of administrative decision time on the labor force participation and earnings of disability applicants (Working Paper No. 20840). Cambridge, MA: National Bureau of Economic Research.

Barnard, J., Frangakis, C. E., Hill, J. L., & Rubin, D. B. (2003). Principal stratification approach to broken randomized experiments: A case study of school choice vouchers in New York City. *Journal of the American Statistical Association*, 98(462), 299-323.

Barnow, B. S., & Trutko, J.W. (2010). *An Evaluation of the Priority of Service Provision of the Jobs for Veterans Act by the Workforce Investment System in Providing Services to Veterans and Other Covered Persons*. Final report submitted to the U.S. Department of Labor, Employment and Training Administration. Arlington, VA: Capital Research Corporation.

Berger, M. C., & Hirsch, B. T. (1983). The civilian earnings experience of Vietnam-era veterans. *Journal of Human Resources*, 455-479.

Berger, M. C., & Hirsch, B. T. (1985). Veteran status as a screening device during the Vietnam era. *Social Science Quarterly*, *66*(1), 79.

Black, D., Hasan, A., Krishnamurty, P., & Lane, J. (2008). *The labor market outcomes of young veterans* (National Opinion Research Center Report). Chicago, IL: University of Chicago.

Boardman, A., Greenberg, D., Vining, A., & Weimer, D. (2011). *Cost-benefit analysis: Concepts and practice.* Boston, MA: Prentice Hall.

Boraas, S., Roemer, G., & Bodenlos, K. (2013). *Assessment of the workforce system's implementation of the veterans' priority of service provision of the Jobs for Veterans Act of 2002.* Final report submitted to the U.S. Department of Labor. Princeton, NJ: Mathematica Policy Research.

Boyle, M. A., & Lahey, J. (2010). Health insurance and the labor supply decisions of older workers: Evidence from a US Department of Veterans Affairs expansion. *Journal of Public Economics, 94*(7–8), 467–478.

Brick, J. M., Williams, D., & Montaquila, J. M. (2011). Address-based sampling for subpopulation surveys. *Public Opinion Quarterly*, *75*(3), 409-428.

Brown, C., & Routon, P. W. (2016). Military service and the civilian labor force: Time-and income-based evidence. *Armed Forces & Society*, *42*(3), 562–584.

Bryant, R. R., Samaranayake, V. A., & Wilhite, A. (1993). The effect of military service on the subsequent civilian wage of the post-Vietnam veteran. *The Quarterly Review of Economics and Finance*, *33*(1), 15–1.

Bureau of Labor Statistics [BLS], U.S. Department of Labor. (2017a, March 22). Employment situation of veterans—2016 [Press release]. Retrieved from https://www.bls.gov/news.release/pdf/vet.pdf

Bureau of Labor Statistics [BLS], U.S. Department of Labor. (last modified 2017b, October 24). Table 3.3. Civilian labor force participation rate, by age, sex, race, and ethnicity, 1996, 2006, 2016, and projected 2026 (in percent). Retrieved from https://www.bls.gov/emp/ep_table_303.htm

Burke, J., & Miller, A. R. (2016). *The Effects of Military Change of Station Moves on Spousal Earnings* (No. WR-1170-OSD). RAND National Defense Research Institute Santa Monica United States.

Buryk, P., Trail, T. E., Gonzalez, G. C., Miller, L. L., & Friedman, E. M. (2015). *Federal Educational Assistance Programs Available to Service Members: Program Features and Recommendations for Improved Delivery*. RAND Corp. Santa Monica, CA.

Card, J. J. (1983). Lives after Vietnam: *The personal impact of military service*. Free Press.

Card, D. (1993). *Using geographic variation in college proximity to estimate the return to schooling* (No. w4483). National Bureau of Economic Research.

Card, D. (1995). Using Geographic Variation in College Proximity to Estimate the Return to Schooling In L.N. Christofides, E.K. Grant, & R. Swidinsky (Eds.), *Aspects of Labour Market Behaviour: Essays in Honour of John Vanderkamp* (pp. 201-222). Toronto, ON: University of Toronto Press.

Card, D. (1999). The causal effect of education on earnings. *Handbook of Labor Economics, 3*(Part A), 1801–1863.

Card, D. (2001). Estimating the return to schooling: Progress on some persistent econometric problems. *Econometrica, 69*(5), 1127–1160.

Chrisinger, C. K. (2013). Earnings progression and the Workforce Investment Act: Evidence from Washington State. *Industrial Relations: A Journal of Economy and Society, 52*(4), 853–877.

Chrisinger, C. K. (2017). Veterans in workforce development: Participation and labor market outcomes (Working paper). Kalamazoo, MI: W.E. Upjohn Institute.

CNA. (2016). *Population representation in the military services: Fiscal year 2015 summary report.* Prepared for the Office of the Under Secretary of Defense Personnel and Readiness. Retrieved from https://www.cna.org/pop-rep/2015/appendixd/d_32.html

Cook, T. D., Shadish, W. R., & Wong, V. C. (2008). Three conditions under which experiments and observational studies produce comparable causal estimates: New findings from within-study comparisons. *Journal of Policy Analysis and Management*: 27(4), 724-750.

Czajka, J. L., Mabli, J., & Cody, S. (2008). *Sample Loss and Survey Bias in Estimates of Social Security Beneficiaries: A Tale of Two Surveys*. Final report submitted to the Social Security Administration. Washington, DC: Mathematica Policy Research.

Coile, C., Duggan, M. G., & Guo, A. (2015). Veterans' labor force participation: What role does the VA's Disability Compensation program play? *American Economic Review, 105*(5), 131–136.

Commission on Evidence-Based Policymaking. (2017). *The Promise of Evidence-based Policymaking: Report of the Commission on Evidence-Based Policymaking.* Retrieved from https://www.cep.gov/content/dam/cep/report/cep-final-report.pdf

Congressional Budget Office. (2017). Labor force experiences of recent veterans. Retrieved from https://www.cbo.gov/publication/52418

Couper, M.P. (2017). New developments in survey data collection. *Annual Review of Sociology*, *43*, 121-145.

D'Amico, R., Dunham, K., Chavoya-Perez, V., Kogan, D., Mack, M., Negoita, M., Paprocki, A., McConnell, S., & Rosenberg, L. (2015). *Providing public workforce services to job seekers: Implementation findings on the WIA Adult and Dislocated Worker programs.* Washington, DC: Mathematica Policy Research.

Davern, M., Klerman, J. A., Baugh, D. K., Call, K. T., & Greenberg, G. D. (2009). An examination of the Medicaid undercount in the Current Population Survey: Preliminary results from record linking. *Health Services Research*, *44*(3*), 965–987.

Defense Manpower Data Center. (2006). *2003 Survey of Retired Military: Overview of findings* (DMDC Report No. 2004-010). Retrieved from www.dtic.mil/get-tr-doc/pdf?AD=ADA440899

Dehejia, R. H., & Wahba, S. (2002). Propensity score-matching methods for nonexperimental causal studies. Review of Economics and statistics, 84(1), 151-161.

Dehejia, R. (2005). Practical propensity score matching: a reply to Smith and Todd. Journal of econometrics, 125(1-2), 355-364.Dietert, M., Dentice, D., & Keig, Z. (2017). Addressing the needs of transgender military veterans: Better access and more comprehensive care. *Transgender Health 2*(1), 35–44. Retrieved from http://online.liebertpub.com/doi/10.1089/trgh.2016.0040

Duflo, E., Glennerster, R., & Kremer, M. (2008). Using randomization in development economics research: A toolkit. In P. T. Schultz & J. A. Strauss (Eds.), *Handbook of development economics*, Edition 1, 4(5), 3895–3962. Cambridge, MA: Elsevier.

Duggan, M. G., Rosenheck, R., & Singleton, P. (2010). Federal policy and the rise in disability enrollment: Evidence for the Veterans Affairs' Disability Compensation program. *The Journal of Law and Economics*, *53*(2), 379-398.

Dunning, T. (2012). *Natural experiments in the social sciences: A design-based approach*. Cambridge, UK: Cambridge UP.

Fredland, J. E., & Little, R. D. (1980). Long-term returns to vocational training: Evidence from military sources. *Journal of Human Resources*, *15*, 49–66.

Garabedian, L. F., Chu, P., Toh, S., Zaslavsky, A. M., & Soumerai, S. B. (2014). Potential bias of instrumental variable analyses for observational comparative effectiveness research. *Annals of Internal Medicine, 161*(2), 131-138.

Goldberg, M. S., & Warner, J. T. (1987). Military experience, civilian experience, and the earnings of veterans. *Journal of Human Resources*, *22,* 62–81.

Greenberg, D. H., & Appenzeller, U. (1998). *Cost analysis step by step*. New York: MDRC.

Greenberg D. H., Deitch V., & Hamilton G. (2009). *Welfare-to-Work program benefits and costs: A synthesis of research*. New York: MDRC.

Greenberg, G. A., & Rosenheck, R. A. (2007). Are male veterans at greater risk for nonemployment than nonveterans? *Monthly Labor Review, 130*(12)*,* 23–31. Retrieved from https://www.bls.gov/opub/mlr/2007/12/art3full.pdf

Groves, R. M. (2006). Nonresponse rates and nonresponse bias in household surveys. *Public Opinion Quarterly, 70*(5), 646–675.

Groves, R. M., & Peytcheva, E. (2008). The impact of nonresponse rates on nonresponse bias: A meta-analysis. *Public Opinion Quarterly, 72*(2), 167–189.

Han, D., Cantor, D., Brick, P. D., & Aponte, M. (2010, May). Findings from a two-phase mail survey for a study of veterans. In *the Annual Meeting of the American Association for Public Opinion Research, Chicago, IL.*

Harter, R., Battaglia, M.P., Buskirk, T.D., Dillman, D.A., English, N., Fahimi, M. … Shook-Sa, B. (2017). *Address-based sampling*. Retrieved from American Association for Public Opinion Research [AAPOR] website: http://www.aapor.org/AAPOR_Main/media/MainSiteFiles/AAPOR_Report_1_7_16_CLEAN-COPY-FINAL.pdf

Heaton, P., & Krull, H. (2012). *Unemployment among post-9/11 veterans and military spouses after the economic downturn.* Santa Monica, CA: RAND.

Heinrich, C. J., Mueser, P. R., Troske, K. R., Jeon, K.-S., & Kahvecioglu, D. C. (2013). Do public employment and training programs work? *IZA Journal of Labor Economics,* https://doi.org/10.1186/2193-8997-2-6

Hirsch, B. T., & Mehay, S. L. (2003). Evaluating the labor market performance of veterans using a matched comparison group design. *Journal of Human Resources*, 38(3), 673-700.

Holder, K. A. (2017, January). *Veterans in rural America: 2011–2015* (American Community Survey Report ACS-36). Retrieved from https://www.census.gov/content/dam/Census/library/publications/2017/acs/acs-36.pdf

Holder, K. A., & Raglin. (2014). *Evaluation of the Revised Veteran Status Question in the 2013 American Community Survey. Final report.* Retrieved from U.S. Census Bureau website: https://www.census.gov/content/dam/Census/library/working-papers/2014/acs/2014_Holder_01.pdf

Holland, P. W. (1988). Causal inference, path analysis, and recursive structural equation models (with discussion). *Sociological Methodology, 18,* 449–493.

Hollenbeck, K., & Huang, W.-J. (2006). Net impact and benefit-cost estimates of the workforce development system in Washington State (Upjohn Institute Technical Report No. TR06-020).

Iacus, S. M., King, G., & Porro, G. (2011). Multivariate matching methods that are monotonic imbalance bounding. *Journal of the American Statistical Association*, *106*(493), 345–361.

Imbens, G. W., & Angrist, J. D. (1994). Identification and Estimation of Local Average Treatment Effects. *Econometrica*, 62(2), 467-475.

Imbens, G. W., & Wooldridge, J. M. (2007). Lecture 1: Estimation of average treatment effects under unconfoundedness. *NBER: What's New in Econometrics.* Retrieved from http://www.nber.org/WNE/lect_1_match_fig.pdf

Imbens, G. W., & Wooldridge, J. M. (2009). Recent developments in the econometrics of program evaluation. *Journal of Economic Literature, 47*(1), 5–86. Retrieved from http://ideas.repec.org/a/aea/jeclit/v47y2009i1p5-86.html

Jobs for Veterans State Grants (JVSG) Program Fact Sheet. (2017). Retrieved from https://www.dol.gov/vets/grants/state/Jobs-for-Veterans-State-Grants-Program-Fact-Sheet-2017.pdf

Kalton, G. (1993). *Sampling rare and elusive populations.* New York: Department for Economic and Social Information and Policy Analysis, United Nations.

Kalton, G. (2003). Practical methods for sampling rare and mobile populations. *Statistics in Transition, 6*, 491–501.

Kalton, G. (2009). Methods for oversampling rare subpopulations in social surveys. *Survey Methodology, 35*(2), 125–141.

Kalton, G., & Anderson, D. W. (1986). Sampling rare populations. *Journal of the Royal Statistical Society: Series A, 149*(1), 65–82.

Kane, T. J., & Rouse, C. E. (1995). Labor-market returns to two- and four-year college. *The American Economic Review, 85*(3), 600–614.

King, G., & Nielsen, R. (2016). Why propensity scores should not be used for matching. Retrieved from http://j.mp/2ovYGsW

Klerman, J. A., A. Clarkwest, C. Goldman, and J. Trutko. (2018) *Evaluation Design Options Report. Veterans' Employment and Training Services (VETS) Research Study Design*. Abt Associates.

Klerman, J. A., Davern, M., Call, K. T., Lynch, V., & Ringel, J. D. (2009). Understanding the Current Population Survey's insurance estimates and the Medicaid "undercount." *Health Affairs, 28*(6), w991–w1001.

Klerman, J. A., & Karoly, L. A. (1994). Young men and the transition to stable employment. *Monthly Labor Review*, *117*(31), 31-48.

Laurence, J. H. (1989). *Effects of military experience on the post-service lives of low-aptitude recruits: Project 100,000 and the ASVAB misnorming* (Final Report 89-29). Prepared for the Office of the Assistant Secretary of Defense for Force Management and Personnel. Alexandria, VA: Human Resources Research Organization.

Leamer, E. E. (1983). Let's take the con out of econometrics. *The American Economic Review*, *73*(1), 31–43.

Little, R. D., & Fredland, J. E. (1979). Veteran status, earnings, and race: Some long term results. *Armed Forces & Society*, *5*(2), 244–260.

Lofquist, D. A. (2017). *Characteristics of female veterans—An analytic view across age-cohorts: 2015* (ACSBR 15-03). Retrieved from
https://www.census.gov/content/dam/Census/library/publications/2017/acs/acsbr15-03.pdf

Loughran, D. S. (2014). *Why is veteran unemployment so high?* Santa Monica, CA: RAND.

Loughran, D. S., Klerman, J. A., & Martin, C. W. (2006). *Activation and the earnings of reservists* (Vol. 474). Santa Monica, CA: RAND.

Loughran, D. S., Martorell, P., Miller, T., & Klerman, J. A. (2011). *The effect of military enlistment on earnings and education.* Santa Monica, CA: RAND.

Mangum, S. L., & Ball, D. E. (1989). The transferability of military-provided occupational training in the post-draft era. *ILR Review*, *42*(2), 230–245.

Martindale, M., & Poston, D. L., Jr. (1979). Variations in veteran/nonveteran earnings patterns among World War II, Korea, and Vietnam war cohorts. *Armed Forces & Society*, *5*(2), 219–243.

Martorell, F., Klerman, J. A., & Loughran, D. S. (2008). How do earnings change when reservists are activated? A reconciliation of estimates derived from survey and administrative data. RAND Corp. Santa Monica, CA.

Martorell, P., Miller, T., Daugherty, L., & Borgschulte, M. (2013). *Effects of military service on earnings and education, revisited: Variation by service duration, occupation, and civilian unemployment.* Santa Monica, CA: RAND.

McClellan, M., McNeil, B. J., & Newhouse, J. P. (1994). Does more intensive treatment of acute myocardial infarction in the elderly reduce mortality? Analysis using instrumental variables. *Journal of the American Medical Association,* 272:11, 859-866.

McConnell, S., Fortson, K., Rotz, D., Schochet, P., Burkander, P., Rosenberg, L., … D'Amico, R. (2016). *Providing public workforce services to job seekers: 15-month impact findings on the WIA Adult and Dislocated Worker programs.* Washington, DC: Mathematica Policy Research.

Medway, R. L., & Fulton, J. (2012). When more gets you less: A meta-analysis of the effect of concurrent web options on mail survey response rates. *Public Opinion Quarterly, 76*(4), 733–746.

Mervis, J. (2014). How two economists got direct access to IRS tax records. *Science*. Retrieved from
http://www.sciencemag.org/news/2014/05/how-two-economists-got-direct-access-irs-tax-records

Meyer, B. D. (1995). Natural and quasi-experiments in economics. *Journal of Business & Economic Statistics*, *13*(2), 151–161.

Montaquila, J. M., Brick, J. M., Williams, D., Kim, K., & Han, D. (2013). A study of two-phase mail survey data collection methods. *Journal of Survey Statistics and Methodology*, *1*(1), 66-87.

Mueser, P. R., & Stevens, D. W. (2003). Low-income and welfare client priorities: Patterns of earnings and welfare receipt for Workforce Investment Act participants (Working paper). Washington, DC: U.S. Department of Labor, Employment Training Administration.

National Center for Veterans Analysis and Statistics, U.S. Department of Veteran Affairs. (2017). Profile of veterans: 2015. Data from the American Community Survey [Presentation slides]. Retrieved from
https://va.gov/vetdata/docs/SpecialReports/Profile_of_Veterans_2015.pdf

Neal, D. A., & Johnson, W.R. (1996). The role of premarket factors in black-white wage differences. *The Journal of Political Economy, 104*(5), 869–895.

Neumark, D. (2002). Youth labor markets in the United States: Shopping around vs. staying put. *Review of Economics and Statistics*, *84*(3), 462–482.

Newhouse J. P., & McClellan, M. (1998). Econometrics in outcomes research: The use of instrumental variables. Annual Review of Public Health, *19*, 17–34.

Olsen, R. J. (1980). A least squares correction for selectivity bias. *Econometrica*, *48*(7), 1815–1820.

Peytcheva, E., & Groves, R. M. (2009). Using variation in response rates of demographic subgroups as evidence of nonresponse bias in survey estimates. *Journal of Official Statistics, 25*(2), 193.

Phillips, R. L., Andrisani, P. J., Daymont, T. N., & Gilroy, C. L. (1992). The economic returns to military service: Race-ethnic differences. *Social Science Quarterly*, *73*(2), 340–359.

Ramsberger, P. F., Barnes, J. D., & DiFazio, A. S. (1995). *The Army Alumni Survey* (Study Report #96-06). Prepared for the U.S. Army Research Institute for the Behavioral and Social Sciences by Human Resources Research Organization. Retrieved from www.dtic.mil/get-tr-doc/pdf?AD=ADA309137

Rosen, S., & Taubman, P. (1982). Changes in life-cycle earnings: What do social security data show?. *Journal of Human Resources*, 321-338.

Rosenbaum, P. R., & Rubin, D. B. (1983). The central role of the propensity score in observational studies for causal effects. *Biometrika, 70*(1), 41–55.

Rosenberg, L., Strayer, M., Boraas, S., English, B., & Khemani, D. (2015). *Providing services to veterans through the public workforce system: Descriptive findings from the WIA Gold Standard Evaluation* (Vol. I). Report by Mathematica Policy Research and Social Policy Research Associates for the U.S. Department of Labor, Employment and Training Administration, Office of Policy Development and Research. Retrieved from https://wdr.doleta.gov/research/FullText_Documents/ETAOP_2015-05_A.pdf

Rosenzweig, M. R., & Wolpin, K. I. (2000). Natural "natural experiments" in economics. *Journal of Economic Literature*, *38*(4), 827–874.

Rotz, D., Burkander, P., Forston, K., McConnell, S., Schochet, P., Grider, M., Molinari, L., & Sachez-Eppler, E. (2016). *Providing Public Workforce Services to Job Seekers: 15-Month Impact Findings on the WIA Adult and Dislocated Worker Programs. Technical Supplement.* Washington, DC: U.S. Department of Labor, Employment and Training Administration.

Routon, P. W. (2014). The effect of 21st century military service on civilian labor and educational outcomes. *Journal of Labor Research*, *35*(1), 15–38.

Samuelson, P. A. (1938). A note on the pure theory of consumers' behaviour. *Economica, New Series, 5*(17), 61–71.

Samuelson, P. A. *(1948). Consumption theory in terms of revealed preference. Economica, New Series, 15(60), 243–253. Retrieved from* https://en.wikipedia.org/wiki/Paul_Samuelson

Savych, B., Klerman, J. A., & Loughran, D. S. (2008). *Recent trends in veteran unemployment as measured in the Current Population Survey and the American Community Survey.* Santa Monica, CA: RAND.

Schwartz, S. (1986). The relative earnings of Vietnam and Korean-era veterans. *Industrial and Labor Relations Review*, 39(4), 564-572.

Sampson, R. J., & Laub, J. H. (1996). Socioeconomic achievement in the life course of disadvantaged men: Military service as a turning point, circa 1940-1965. American sociological review, 347-367.

Smith, J. A., & Todd, P. E. (2001). Reconciling conflicting evidence on the performance of propensity-score matching methods. *American Economic Review*, 91(2), 112-118.

Smith, J. A., & Todd, P. E. (2005). Does matching overcome LaLonde's critique of nonexperimental estimators?. *Journal of econometrics*, 125(1-2), 305-353.

Steele, J. L., Salcedo, N., & Coley, J. (2010). *Service members in school: Military veterans' experiences using the Post-9/11 GI Bill and pursuing postsecondary education*. RAND Corp. Santa Monica, CA.

Stolzenberg, R. M., & Relles, D. A. (1990). Theory testing in a world of constrained research design: The significance of Heckman's censored sampling bias correction for nonexperimental research. *Sociological Methods & Research*, *18*(4), 395–415.

Stuart, E. A. (2010). Matching methods for causal inference: A review and look forward. *Statistical Science, 25*(1), 1–21.

Teachman, J. (2004). Military service during the Vietnam era: Were there consequences for subsequent civilian earnings?. *Social Forces*, 83(2), 709-730.

Teachman, J. D., & Call, V. R. (1996). The effect of military service on educational, occupational, and income attainment. *Social Science Research*, 25(1), 1-31.

Teachman, J., & Tedrow, L. (2007). Joining up: Did military service in the early all volunteer era affect subsequent civilian income? *Social Science Research, 36*(4), 1447–1474.

Topel, R. H., & Ward, M. P. (1992). Job mobility and the careers of young men. *The Quarterly Journal of Economics*, *107*(2), 439–479.

Trutko, J. W., & Barnow, B. S. (2010). *An evaluation of the priority of service provision of the Jobs for Veterans Act by the workforce investment system in providing services to veterans and other covered persons.* Washington, DC: U.S. Department of Labor, Employment and Training Administration.

Trutko, J., O'Brien, C., Trutko, A., Barnow, B., Kaiser, J., Woolsey, L., …Wang. B. (2016). Formative evaluation of the Homeless Veterans' Reintegration Program (HVRP): Findings from literature review, site visits, analyses of program administrative data, and options for future evaluation. Prepared for the U.S. Department of Labor, Chief Evaluation Office. Rockville, MD: Avar Consulting.

U.S. Census Bureau. (2009). *The researcher handbook: U.S. Bureau of the Census Center for Economic Studies Research Data Center's handbook for researchers.* Retrieved from https://www.census.gov/content/dam/Census/programs-surveys/sipp/methodology/Researcher_Handbook_20091119.pdf

U.S. Census Bureau. (2016, September 8). Frequently asked questions about accessing data in the data linkage infrastructure. Retrieved from https://www2.census.gov/about/linkage/faqs.pdf

U.S. Census Bureau. (n.d.). *Center for Administrative Records Research and Applications*. Retrieved from https://www.census.gov/ces/pdf/CARRA_Introduction.pdf

U.S. Department of Labor. (2010). *Refocused roles and responsibilities of Jobs for Veterans State Grant funded staff* (VPL No. 07-10). Retrieved from https://www.dol.gov/vets/VMS/VPLs/VPL-07-10.pdf

U.S. Department of Labor. (2014a). *Designation of additional population of veterans eligible for services from the Disabled Veterans' Outreach Program specialist—Veterans ages 18 to 24* (VPL No. 04-14). Retrieved from https://www.dol.gov/vets/VMS/VPLs/VPL-04-14.pdf

U.S. Department of Labor. (2014b). *Jobs for Veterans' State Grants (JVSG) program reforms and roles and responsibilities of American Job Center (AJC) staff serving veterans* (VPL No. 03-14). Retrieved from https://www.dol.gov/vets/VMS/VPLs/VPL-03-14.pdf

U.S. Department of Labor. (2014c). *Jobs for Veterans' State Grants (JVSG) program reforms and roles and responsibilities of American Job Center (AJC) staff serving veterans* (TEGL No. 19-13). Retrieved from https://wdr.doleta.gov/directives/attach/TEGL/TEGL_19_13.pdf

U.S. Department of Labor. (2015). *Guidance on services provided through the Adult and Dislocated Worker Program under the Workforce Innovation and Opportunity Act (WIOA or Opportunity Act) and Wagner Peyser, as amended by WIOA, and guidance for the transition to WIOA services* (TEGL WIOA No 3-15). Retrieved from https://wdr.doleta.gov/directives/attach/TEGL/TEGL_03-15_Acc.pdf

U.S. Department of Labor. (2016). *Guidance on services provided through the Adult and Dislocated Worker Programs under the Workforce Innovation and Opportunity Act (WIOA) and the Wagner-Peyser Act Employment Service (ES), as amended by title III of WIOA, and for implementation of the WIOA Final Rules* (TEGL WIOA No. 19-16). Retrieved from https://wdr.doleta.gov/directives/attach/TEGL/TEGL_19-16.pdf

U.S. Department of Labor, Veterans Employment and Training Service. (2017). *Annual report to Congress, fiscal year 2016.* Washington, DC: Authors. https://www.dol.gov/vets/media/VETS_FY16_Annual_Report_to_Congress.pdf

U.S. Department of Labor. (2018). *Redesigned National Veterans' Training Institute (NVTI) core courses* (VPL No. 05-18). Retrieved from: https://www.dol.gov/vets/VMS/VPLs/VPL_on_NVTI_Core_JVSG_Course_Transition-Final.pdf

U.S. Government Accountability Office. (2017). *DOD Needs to Improve Performance Reporting and Monitoring for the Transition Assistance Program*, GAO 18-23. Retrieved from https://www.gao.gov/assets/690/688203.pdf

Villemez, W. J., & Kasarda, J. D. (1976). Veteran status and socioeconomic attainment. *Armed Forces & Society*, 2(3), 407-420.

Waksberg, J. (1973, August). The effect of stratification with differential sampling rates on attributes of subsets of the population. In *Proceedings of the Social Statistics Section*, American Statistical Association (Vol. 22).

Walker, J. A. (2008). Employment characteristics of Gulf War-era II veterans in 2006: A visual essay. *Monthly Labor Review, 131*(5), 3–13. Retrieved from https://www.bls.gov/opub/mlr/2008/05/art1full.pdf

Walker, J. A. (2010). Employment and earnings of recent veterans: Data from the CPS. *Monthly Labor Review, 133*(7), 3–9. Retrieved from https://www.bls.gov/opub/mlr/2010/07/art1full.pdf

Wenger, J. W., Miller, T., Baird, M. D., Buryk, P., Daugherty, L., Graf, M., … & Yeung, D. (2017). *Are Current Military Education Benefits Efficient and Effective for the Services?*. RAND.

Westat. (2010). *National survey of veterans, active duty service members, demobilized National Guard, and reserve members, family members, and surviving spouses. Final report.* Retrieved from https://www.va.gov/vetdata/docs/SurveysAndStudies/NVSSurveyFinalWeightedReport.pdf

Wiggins, B. K., Evans, S., Luchman, J. N., & Gibson, J. L. (2014). Motivators and barriers to recruiting prior service members in the IRR. *Military Psychology, 26*(1), 23–32. Retrieved from http://www.tandfonline.com/doi/abs/10.1037/mil0000026?journalCode=hmlp20

Williams, D., Brick, J. M., Montaquila, J. M., & Han, D. (2016). Effects of screening questionnaires on response in a two-phase postal survey. *International Journal of Social Research Methodology*, *19*(1), 51-67

Xie, Yu. (1992). "The Socioeconomic Status of Young Male Veterans, 1964-1984." *Social Science Quarterly* 73: 379-396.